TA-EX5

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model
Tourist Model

SONY
MHC-EX5
TAPE 1
TAPE 2
MD/DAT
AUX/VIDEO
CD
TUNER
HIGH QUALITY DESIGN
INTEGRATED STEREO AMPLIFIER

TA-EX5 is amplifier section in MHC-EX5.

SPECIFICATIONS

Integrated stereo amplifier

40 W + 40 W (6 ohms, at 1 kHz, DIN)

Continuous RMS power output
50 W + 50 W (6 ohms, at 1 kHz, 5% THD)

Music power output
100 W + 100 W (6 ohms at 1 kHz, 10% THD)

Inputs
- CD (phono jacks):
- MD/DAT (phono jacks):
  - sensitivity 450 mV, impedance 47 kilohms
- TUNER (phono jacks):
- AUX/VIDEO (phono jacks):
- TAPE1 (phono jacks):
- TAPE2 (phono jacks):
  - sensitivity 250 mV, impedance 47 kilohms

Outputs
- MD/DAT (phono jacks):
  - voltage 250 mV
  - impedance 1 kilohm
- HEADPHONES (stereo phono jack):
  - accepts headphones of 8 ohms or more
- TAPE1 (phono jacks):
- TAPE2 (phono jacks):
  - voltage 250mV
  - impedance 1 kilohm

Dimensions
Approx. 280 x 125 x 315 mm (w/h/d)
(11 1/8 x 5 x 12 1/2 inches)

Mass Approx. 5.5 kg
(12 lb 3 oz)

General

Power requirements

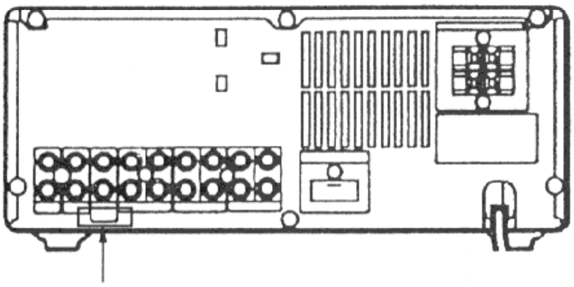
Destination	Power requirements
Australian model	220 – 240V AC, 50Hz
AEP, UK, German, Italian, CIS, East European model	220 – 230V AC,50/60Hz
E, Saudi Arabia, Mexican, Malaysia, Singapore, Hong Kong, Tourist model	110 – 120V/220V – 240V AC, 50/60Hz Adjustable with the Voltage Selector

Design and specifications subject to change without notice.

MICROFILM

MINI Hi-Fi COMPONENT SYSTEM

SONY®



MODEL IDENTIFICATION
– BACK PANEL –

MODEL	PARTS NO.
AEP 2	4-970-969-0☐
German	4-970-969-1☐
UK	4-970-969-2☐
AEP, CIS	4-970-969-3☐
UK 1	4-970-969-4☐
EE	4-970-969-5☐
Italian	4-970-969-6☐
E, Saudi Arabia, Malaysia, Mexican, Singapore, Tourist	4-970-969-7☐
Australian	4-970-969-8☐
Hong Kong	4-970-969-9☐

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

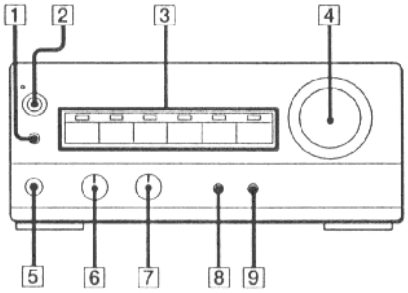
SECTION 1
GENERAL

This section is extracted from instruction manual.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details on how to use the controls. Controls with an asterisk have indicators on themselves.

Integrated stereo amplifier



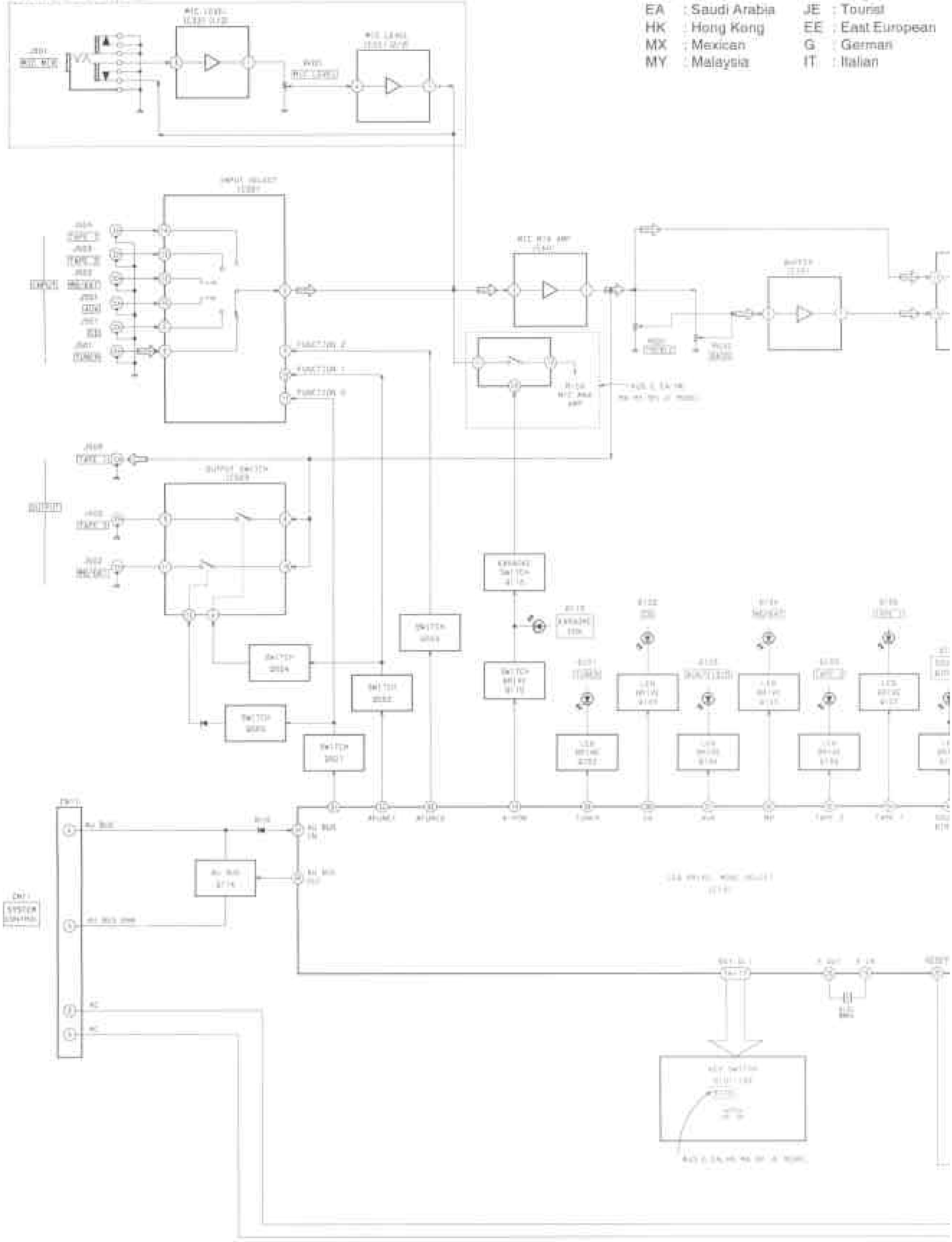
1 Remote sensor
2 SYSTEM POWER switch and ON/STANDBY indicator (7)
The indicator remains lit as long as the AC power cord is connected to a wall outlet.
3 FUNCTION buttons* (19, 23)
TAPE 1 (23)
TAPE 2 (23)
MD/DAT (23)
AUX/VIDEO (24)
CD (15)
TUNER (19)
4 VOLUME control (5, 7, 20)
5 HEADPHONES jack (20, 23)
6 BASS control (20)
7 TREBLE control (20)
8 SOURCE DIRECT button* (20)
9 MUTING button* (20)

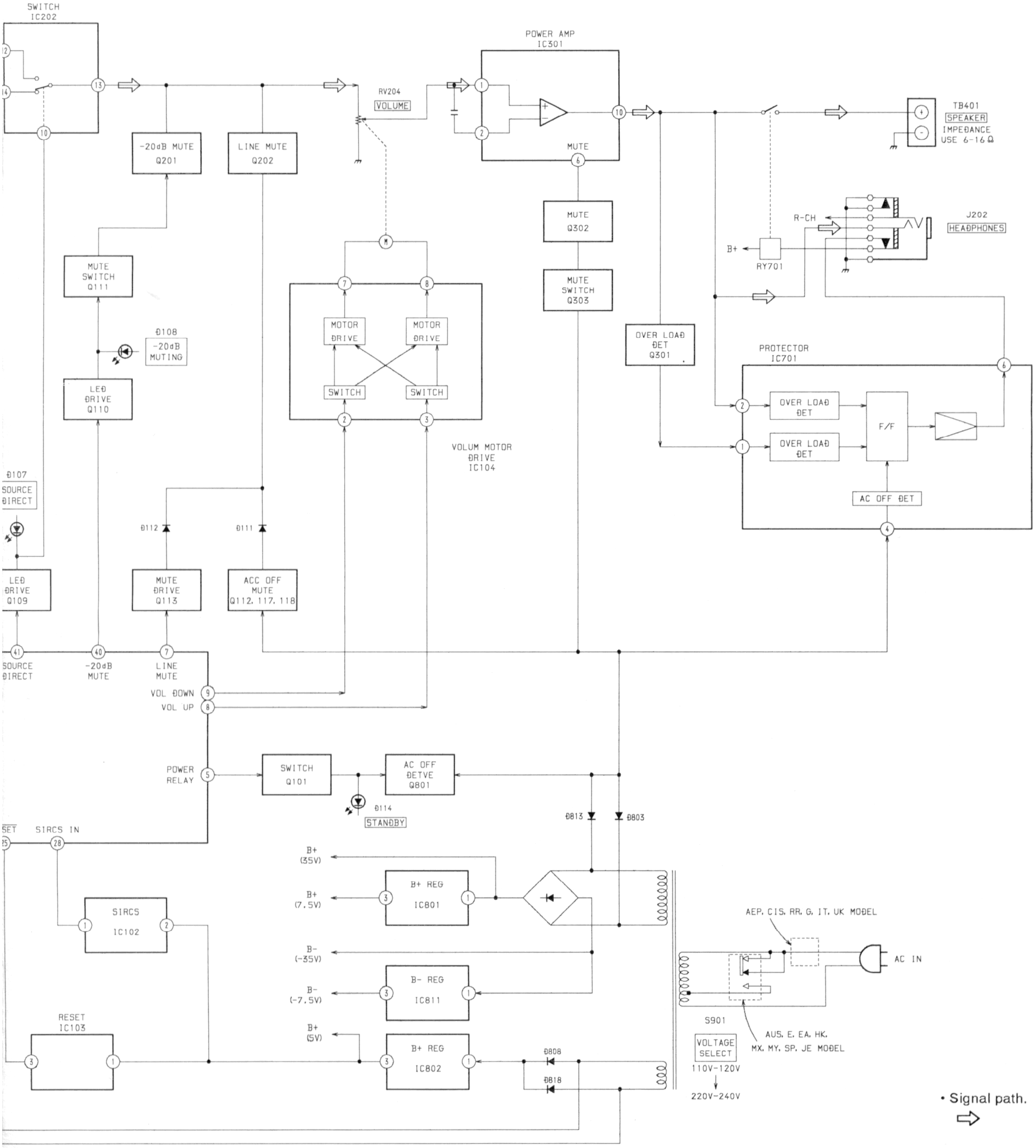
SECTION 2
DIAGRAMS

2-1. BLOCK DIAGRAM

- Abbreviation

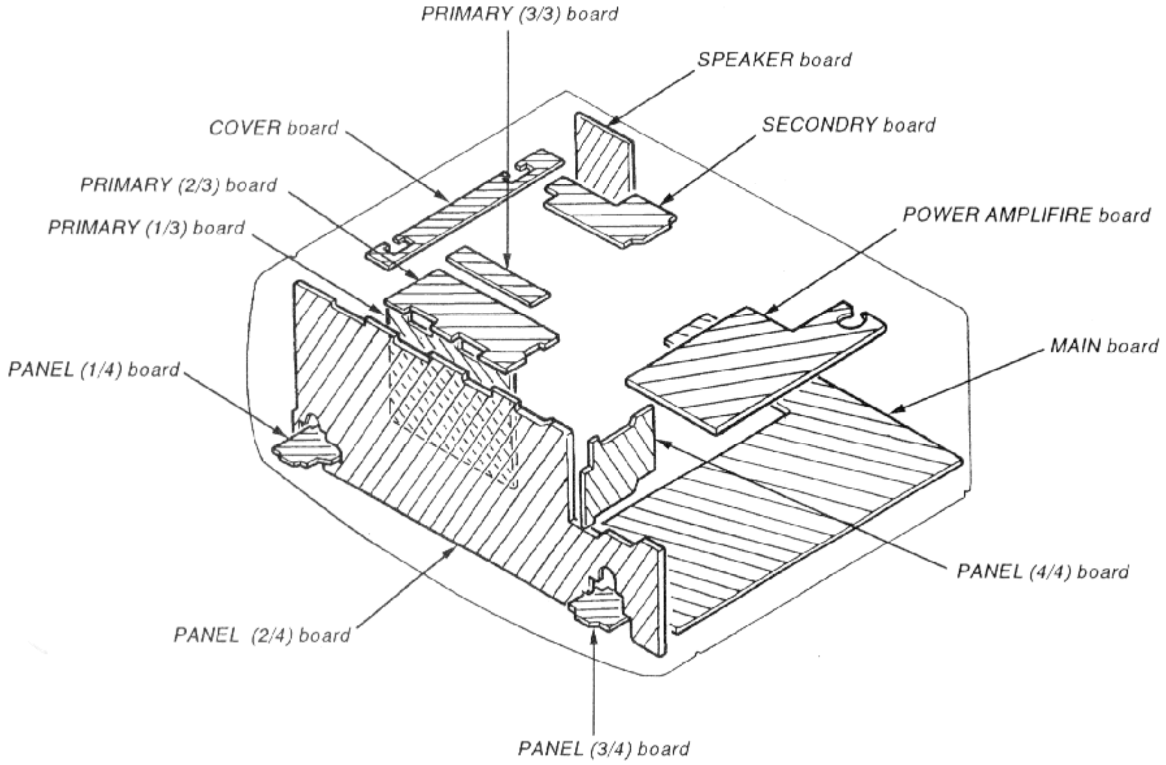
AUS	: Australian	SP	: Singapore
EA	: Saudi Arabia	JE	: Tourist
HK	: Hong Kong	EE	: East European
MX	: Mexican	G	: German
MY	: Malaysia	IT	: Italian


AUS, E, EA, HK, MX, MY, SP, JE MODEL
J801
MIC MIX
MIC LEVEL
MIC LEVEL
INPUT SELECT
INPUT
TAPE 2
TAPE 1
TUNER
FUNCTION 2
FUNCTION 1
FUNCTION 0
MIC MIX AMP
BUFFER
OUTPUT SWITCH
OUTPUT
TAPE 1
TAPE 2
KARAOKE SWITCH
SWITCH
SWITCH
SWITCH
SWITCH
SWITCH
LED DRIVE
LED DRIVE
LED DRIVE
LED DRIVE
LED DRIVE
LED DRIVE
AU BUS
AU BUS IN
AU BUS OUT
CN701
SYSTEM CONTROL
AC
AC
TUNER
TAPE 2
TAPE 1
KEY SWITCH
RESET


SWITCH
IC202
13
10
-20dB MUTE
Q201
LINE MUTE
Q202
RV204
VOLUME
M
POWER AMP
IC301
MUTE
TB401
SPEAKER
IMPEDANCE
USE 6-16Ω
R-CH
J202
HEADPHONES
B+
RY701
MUTE
Q302
MUTE
SWITCH
Q303
MUTE
SWITCH
Q111
D108
-20dB
MUTING
LED
DRIVE
Q110
MOTOR
DRIVE
MOTOR
DRIVE
SWITCH
SWITCH
VOLUM MOTOR
DRIVE
IC104
OVER LOAD
DET
Q301
PROTECTOR
IC701
OVER LOAD
DET
OVER LOAD
DET
F/F
AC OFF DET
D107
SOURCE
DIRECT
D112
D111
LED
DRIVE
Q109
MUTE
DRIVE
Q113
ACC OFF
MUTE
Q112, 117, 118
SOURCE
DIRECT
-20dB
MUTE
LINE
MUTE
VOL DOWN
VOL UP
POWER
RELAY
SWITCH
Q101
AC OFF
DETVE
Q801
D114
STANDBY
D813
D803
SET
SIRCS IN
B+
(35V)
B+
(7.5V)
B+ REG
IC801
SIRCS
IC102
B-
(-35V)
B-
(-7.5V)
B- REG
IC811
AEP, CIS, RR, G, IT, UK MODEL
AC IN
AUS, E, EA, HK,
MX, MY, SP, JE MODEL
S901
VOLTAGE
SELECT
110V-120V
220V-240V
RESET
IC103
B+
(5V)
B+ REG
IC802
D808
D818

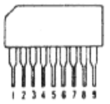
• Signal path. ⇨

• CIRCUIT BOARD LOCATION

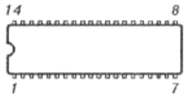

PRIMARY (3/3) board
SPEAKER board
COVER board
SECONDRY board
PRIMARY (2/3) board
PRIMARY (1/3) board
POWER AMPLIFIRE board
MAIN board
PANEL (1/4) board
PANEL (4/4) board
PANEL (2/4) board
PANEL (3/4) board

• SEMICONDUCTOR LEAD LAYOUTS

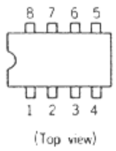
BA6208



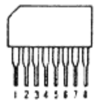
MC14066BCP



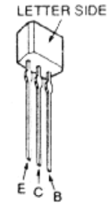
M5218AP
NJM4565D


8 7 6 5
1 2 3 4
(Top view)

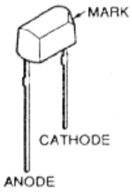
µPC1237HA



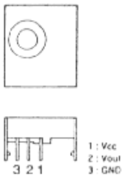
2SC3623A-LK


LETTER SIDE
E C B

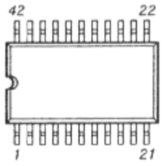
SEL5221S


MARK
CATHODE
ANODE

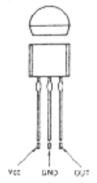
GP1U58XB


3 2 1
1 : Vcc
2 : Vout
3 : GND

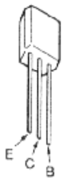
M37471M2-281SP



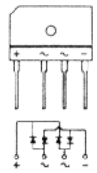
PST600C-T



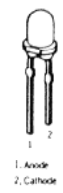
DTA124ES
DTC124ES
2SC2603-EF



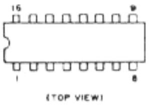
D5SBA20F01



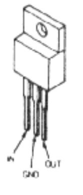
TLO124


1
2
1. Anode
2. Cathode

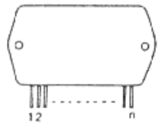
MC14051BCP
MC14052BCP


16
9
1
8
(TOP VIEW)

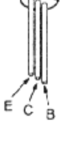
M5F7807L
M5F7907L
TA7805S



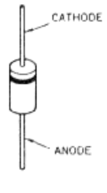
STK4152MK2K
STK4162MK2



2SC1841-PAFAEA



1N4148M
10E2

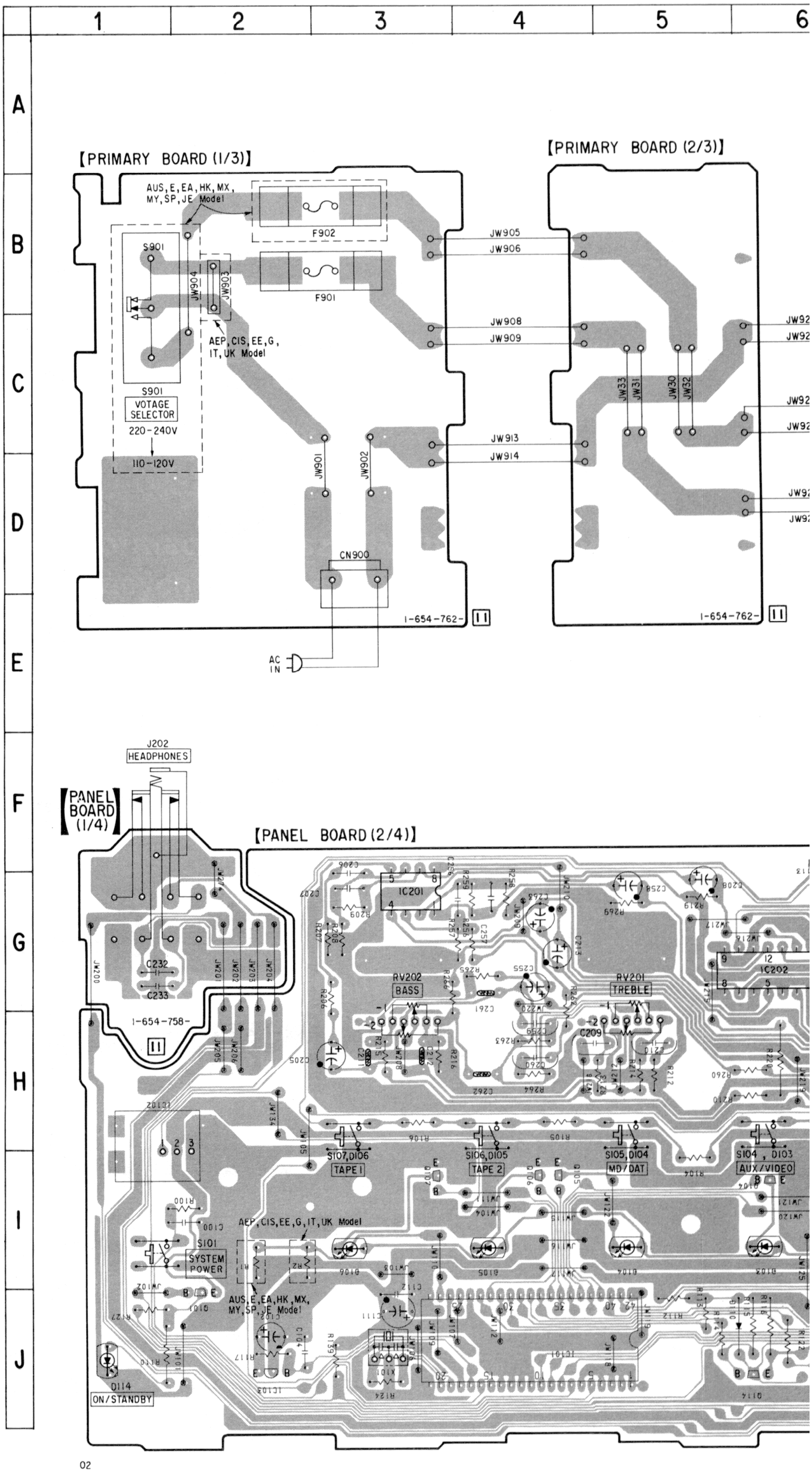

CATHODE
ANODE

2-2. PRINTED WIRING BOARDS

- Refer to page 5 for Semiconductor Lead Layouts.

• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D101	I - 8	IC601	D - 14
D102	J - 7	IC701	E - 15
D103	J - 6	IC801	E - 13
D104	I - 5	IC802	I - 15
D105	I - 4	IC811	F - 13
D106	I - 3		
D107	G - 7	Q101	I - 2
D108	G - 8	Q102	I - 7
D110	J - 5	Q103	I - 6
D111	G - 7	Q104	I - 6
		Q105	I - 4
D112	G - 7		
D113	G - 9	Q106	I - 4
D114	J - 1	Q107	I - 3
D301	H - 19	Q109	G - 7
D351	I - 19	Q110	G - 8
		Q111	G - 7
D551	C - 19		
D552	C - 19	Q112	G - 8
D553	B - 19	Q113	F - 6
D554	B - 18	Q114	J - 6
D555		Q115	G - 9
		Q116	F - 8
D701	E - 14		
D702	E - 16	Q117	F - 8
D803	H - 13	Q118	F - 7
D804	G - 14	Q201	H - 9
D807	E - 13	Q202	H - 9
		Q251	H - 8
D808	I - 14		
D813	H - 13	Q252	H - 9
D817	F - 13	Q301	H - 19
D818	I - 14	Q302	G - 20
		Q303	G - 19
		Q351	I - 19
IC101	J - 4		
IC102	H - 1	Q501	B - 18
IC103	J - 2	Q502	B - 18
IC104	J - 10	Q503	B - 18
IC201	G - 3	Q504	C - 18
		Q505	B - 18
IC202	G - 6		
IC221	H - 11	Q506	B - 18
IC301	I - 18	Q701	E - 14
IC501	C - 14	Q801	I - 14
IC502	C - 13		
IC503	D - 14		
IC504	C - 13		

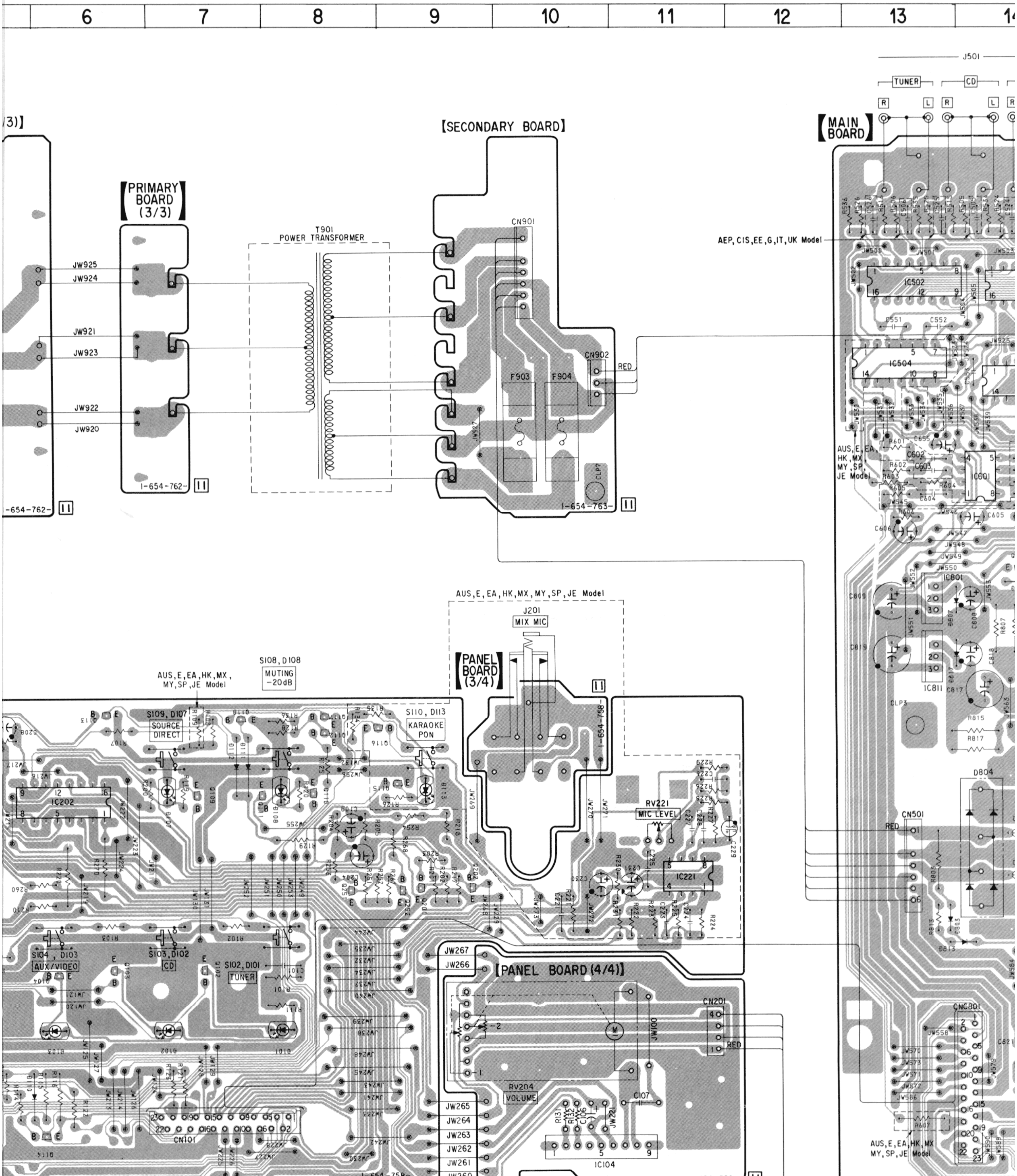

1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
[PRIMARY BOARD (1/3)]
[PRIMARY BOARD (2/3)]
AUS, E, EA, HK, MX, MY, SP, JE Model
AEP, CIS, EE, G, IT, UK Model
S901
VOTAGE SELECTOR
220-240V
110-120V
F902
F901
JW905
JW906
JW908
JW909
JW913
JW914
JW904
JW903
JW901
JW902
JW33
JW31
JW30
JW32
CN900
1-654-762-
11
AC IN
J202
HEADPHONES
PANEL BOARD (1/4)
[PANEL BOARD (2/4)]
1-654-758-
IC201
IC202
RV202
BASS
RV201
TREBLE
C232
C233
S107, D106
TAPE 1
S106, D105
TAPE 2
S105, D104
MD/DAT
S104, D103
AUX/VIDEO
S101
SYSTEM POWER
AEP, CIS, EE, G, IT, UK Model
AUS, E, EA, HK, MX, MY, SP, JE Model
D114
ON/STANDBY
02

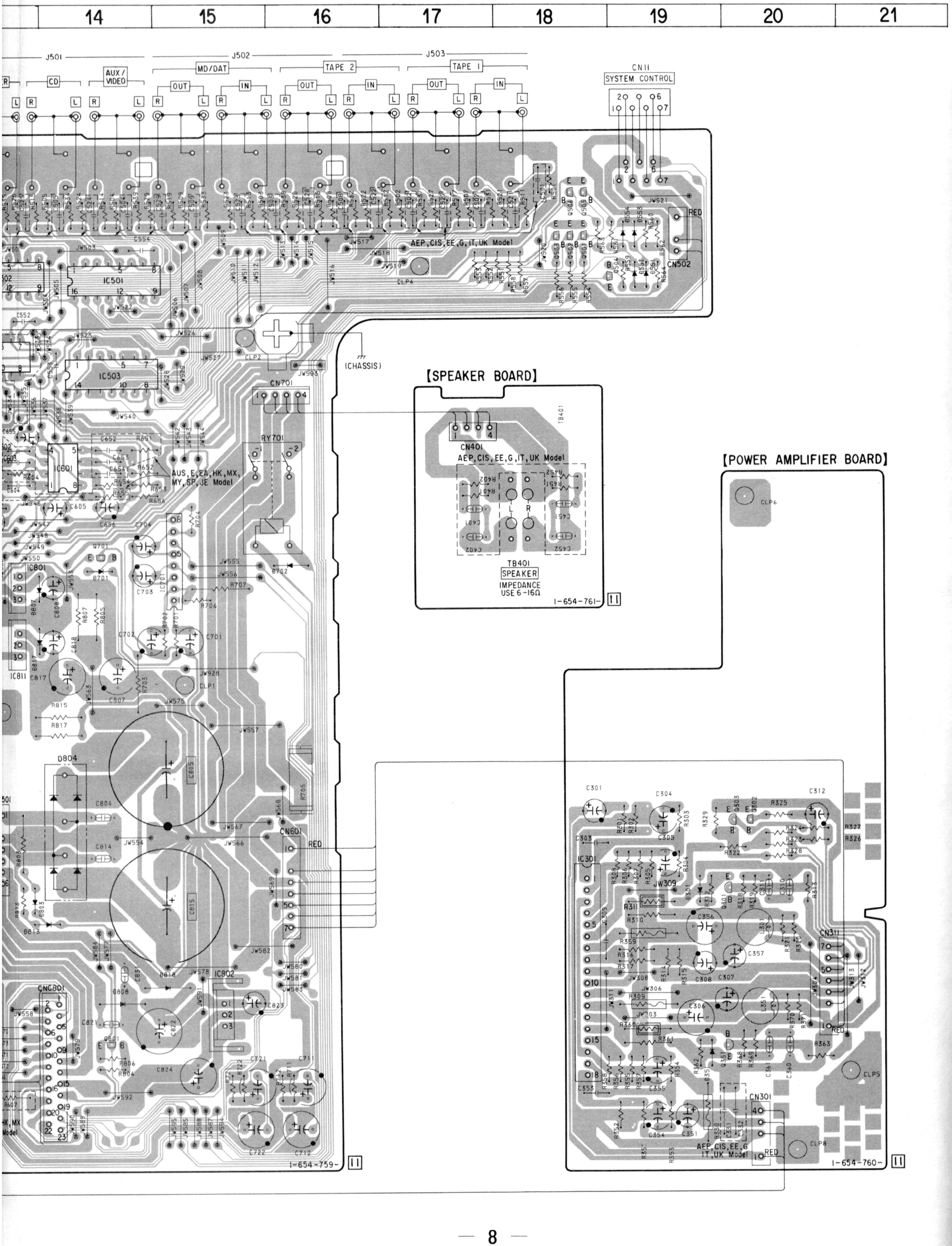
Note:

- ○— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.
- Abbreviation

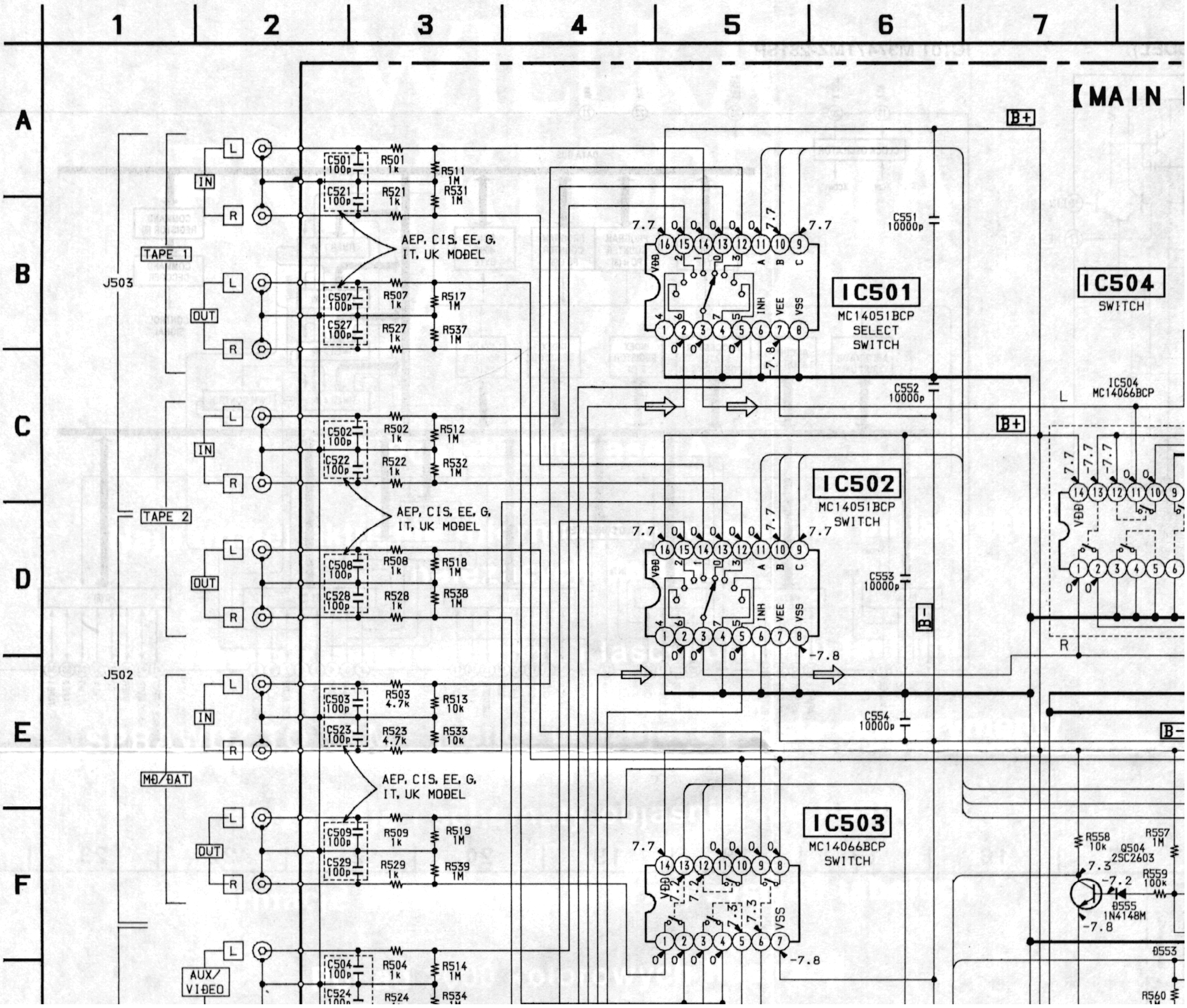
AUS : Australian
EA : Saudi Arabia
HK : Hong Kong
MX : Mexican
MY : Malaysia
SP : Singapore
JE : Tourist
EE : East European
G : German
IT : Italian

ead Layouts.

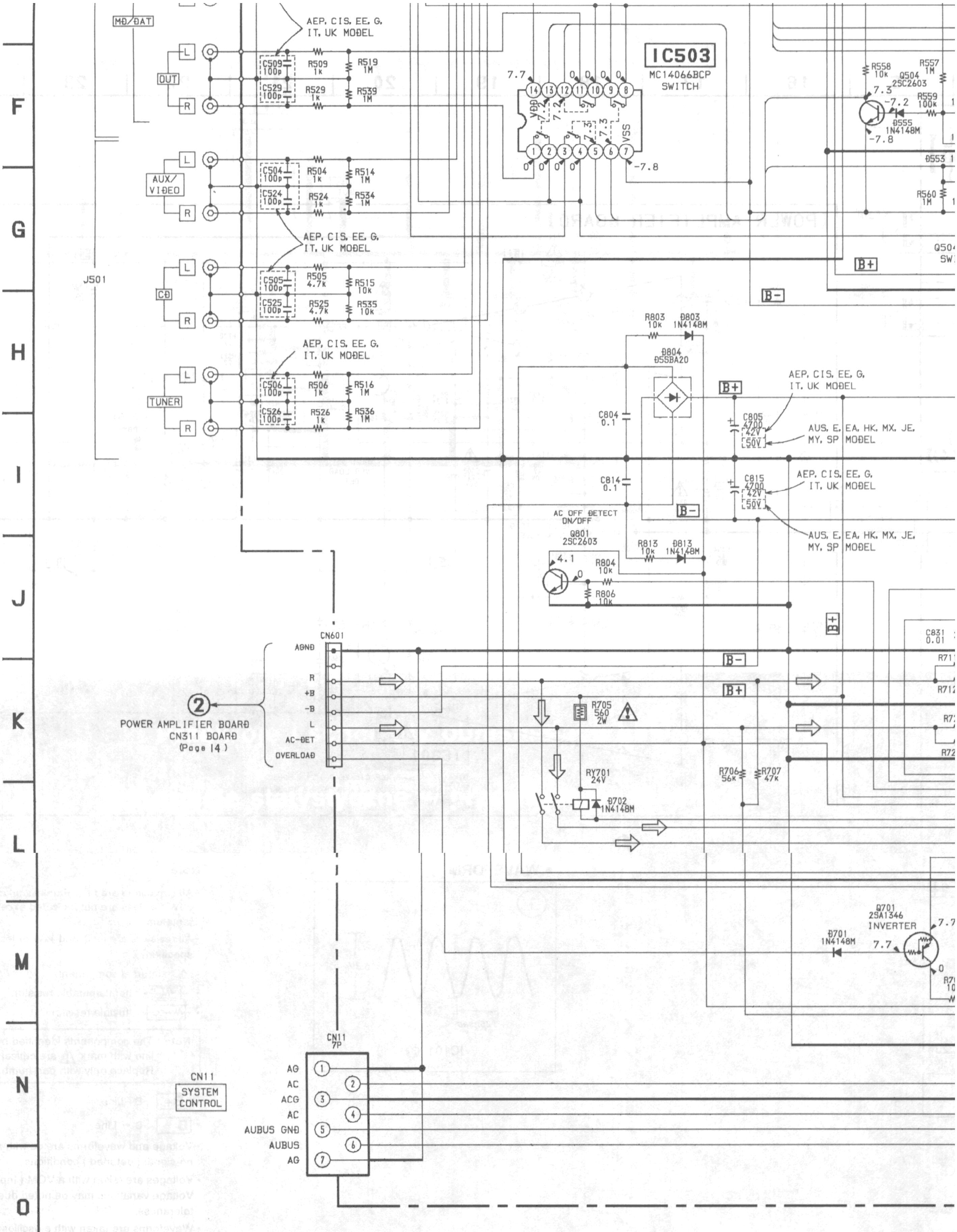

6
7
8
9
10
11
12
13
14
/3)]
-654-762-
11
PRIMARY BOARD (3/3)
JW925
JW924
JW921
JW923
JW922
JW920
1-654-762-
11
T901 POWER TRANSFORMER
SECONDARY BOARD
CN901
CN902
RED
F903
F904
CLP7
1-654-763-
11
J501
TUNER
CD
R
L
MAIN BOARD
AEP, CIS, EE, G, IT, UK Model
IC502
IC504
IC601
IC801
IC811
C551
C552
C602
C603
C604
C605
C606
C655
C809
C819
C817
C818
C821
R601
R602
R603
R604
R807
R815
R817
R803
R813
R607
CLP3
D804
D803
D813
CN501
RED
CNC801
AUS, E, EA, HK, MX, MY, SP, JE Model
AUS, E, EA, HK, MX, MY, SP, JE Model
J201
MIX MIC
PANEL BOARD (3/4)
11
1-654-758-
S108, D108
MUTING -20dB
AUS, E, EA, HK, MX, MY, SP, JE Model
S109, D107
SOURCE DIRECT
S110, D113
KARAOKE PON
IC202
RV221
MIC LEVEL
IC221
S104, D103
AUX/VIDEO
S103, D102
CD
S102, D101
TUNER
CN101
JW267
JW266
PANEL BOARD (4/4)
CN201
RED
M
RV204
VOLUME
C107
IC104
JW265
JW264
JW263
JW262
JW261
JW260
JW259
1-654-758-
11
1-654-758-
11

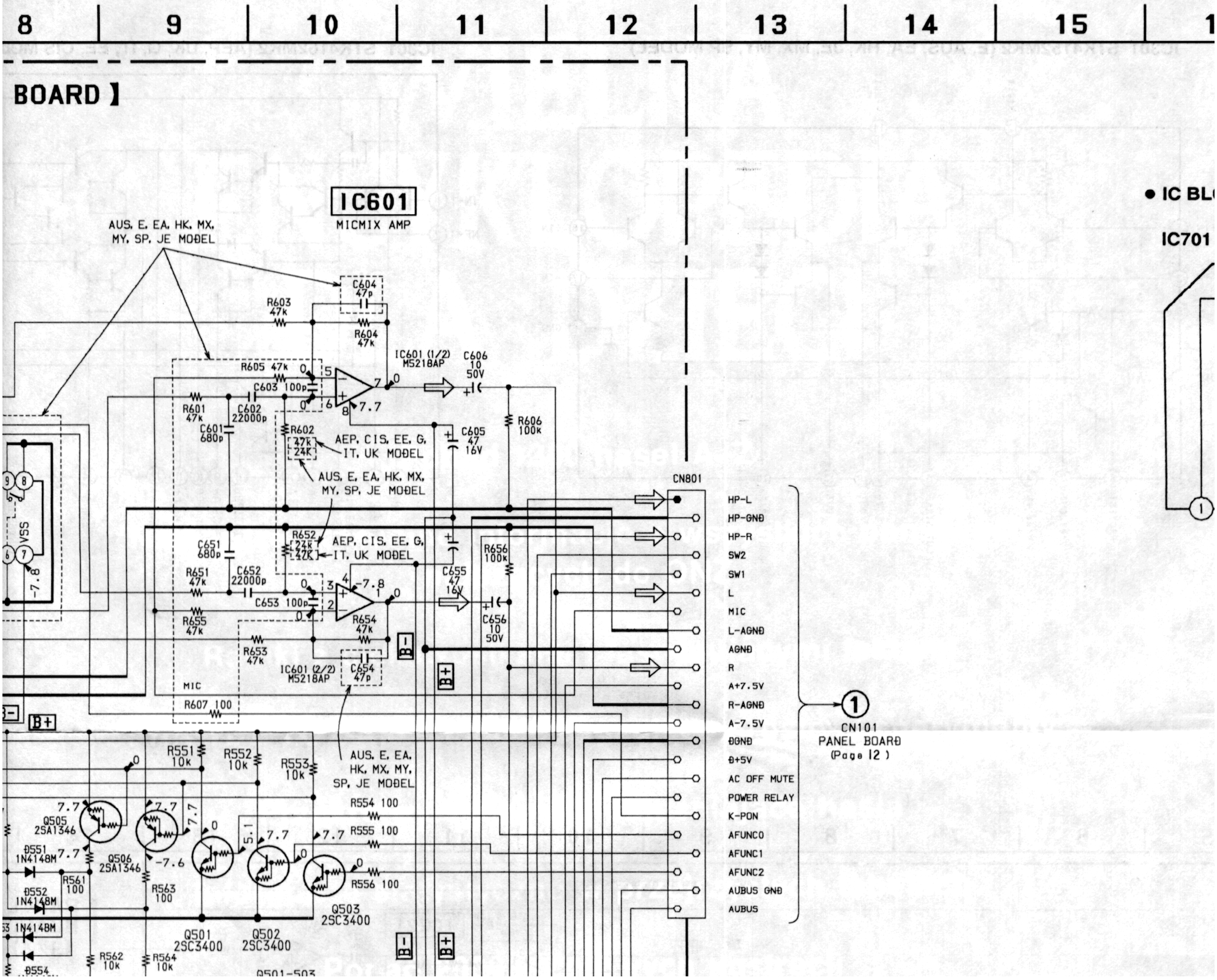

14
15
16
17
18
19
20
21
J501
J502
J503
CD
AUX / VIDEO
MD/DAT
TAPE 2
TAPE 1
OUT
IN
R
L
CN11
SYSTEM CONTROL
IC501
IC503
IC601
IC801
IC811
IC802
RY701
CN701
CN502
CN601
CNC801
D804
AEP, CIS, EE, G, IT, UK Model
AUS, E, EA, HK, MX, MY, SP, JE Model
(CHASSIS)
CLP1
CLP2
CLP4
RED
1-654-759-
11
[SPEAKER BOARD]
CN401
AEP, CIS, EE, G, IT, UK Model
TB401
SPEAKER
IMPEDANCE USE 6-16Ω
1-654-761-
11
[POWER AMPLIFIER BOARD]
CLP6
IC301
CN311
CN301
CLP5
CLP8
AEP, CIS, EE, G IT, UK Model
RED
1-654-760-
11

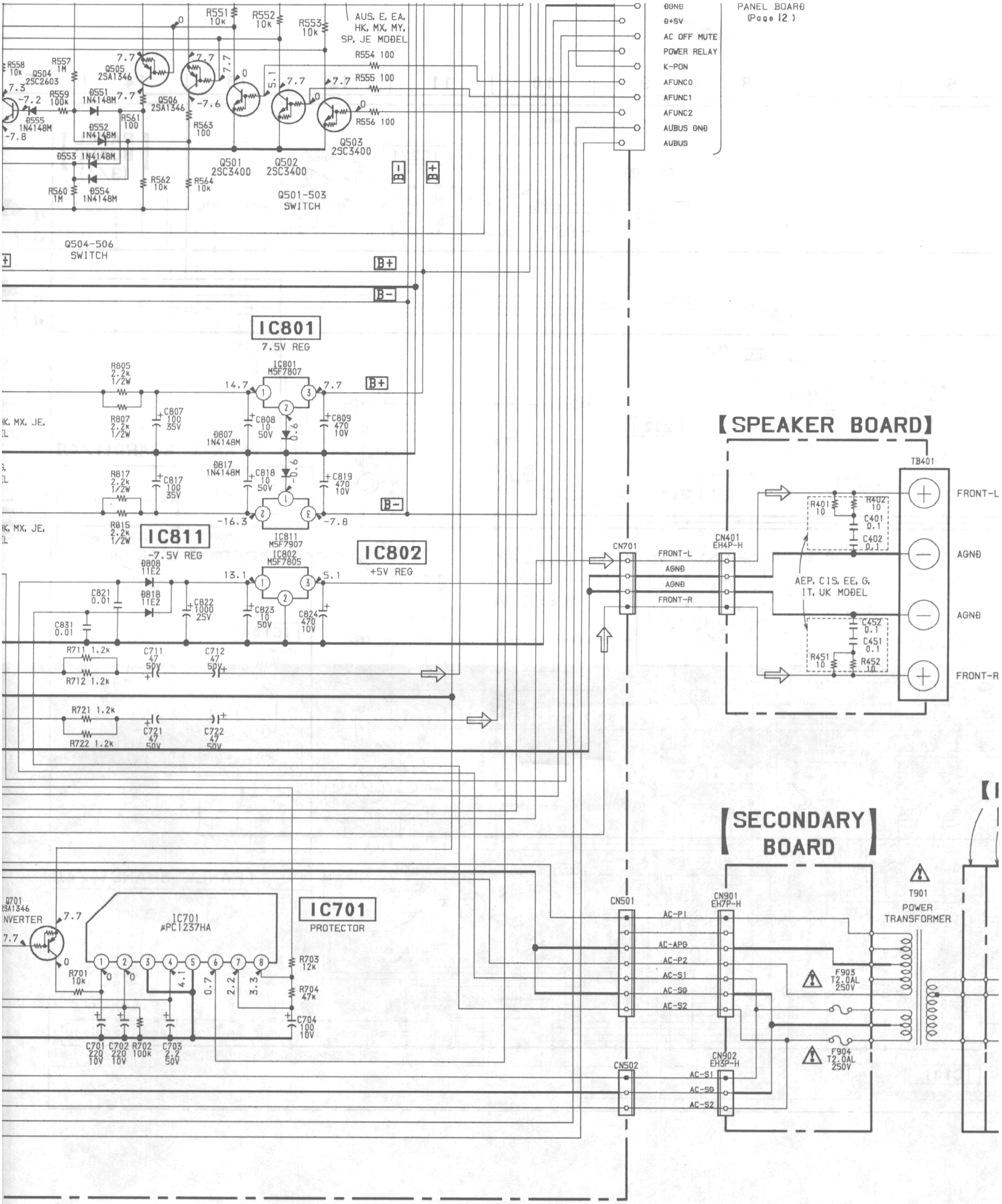
2-3. SCHEMATIC DIAGRAM – MAIN SECTION



1
2
3
4
5
6
7
A
B
C
D
E
F
【MAIN
J503
J502
TAPE 1
TAPE 2
MD/DAT
AUX/VIDEO
IN
OUT
L
R
C501 100p
C521 100p
R501 1k
R521 1k
R511 1M
R531 1M
AEP, CIS, EE, G, IT, UK MODEL
C507 100p
C527 100p
R507 1k
R527 1k
R517 1M
R537 1M
C502 100p
C522 100p
R502 1k
R522 1k
R512 1M
R532 1M
C508 100p
C528 100p
R508 1k
R528 1k
R518 1M
R538 1M
C503 100p
C523 100p
R503 4.7k
R523 4.7k
R513 10k
R533 10k
C509 100p
C529 100p
R509 1k
R529 1k
R519 1M
R539 1M
C504 100p
C524 100p
R504 1k
R524 1k
R514 1M
R534 1M
IC501
MC14051BCP
SELECT SWITCH
IC502
MC14051BCP
SWITCH
IC503
MC14066BCP
SWITCH
IC504
SWITCH
IC504 MC14066BCP
VDD
INH
VEE
VSS
A
B
C
7.7
-7.7
-7.8
7.2
7.3
0
B+
B-
C551 10000p
C552 10000p
C553 10000p
C554 10000p
R558 10k
R557 1M
Q504 2SC2603
R559 100k
D555 1N4148M
-7.2
-7.8
D553
R560 1M

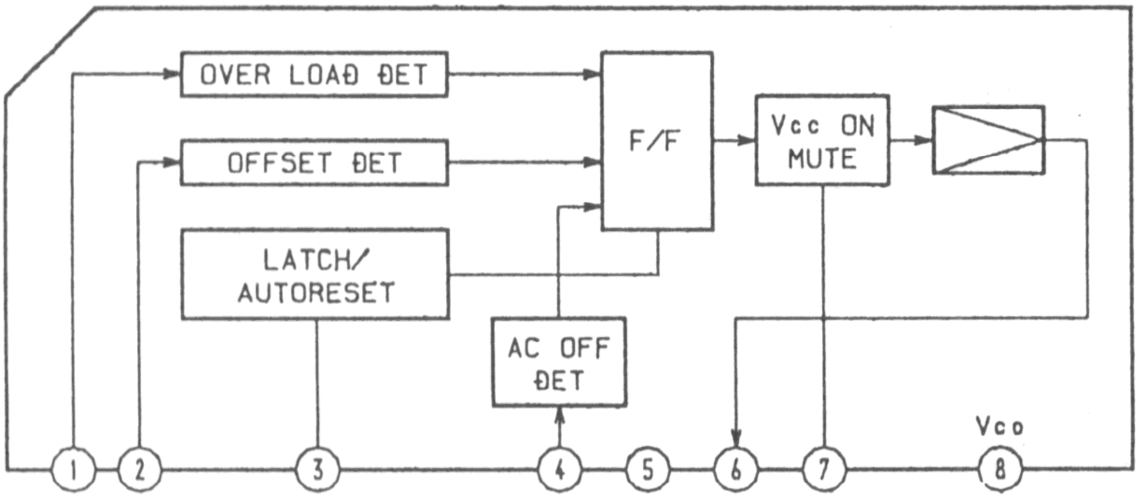

F
G
H
I
J
K
L
M
N
O
MD/DAT
OUT
L
R
AUX/VIDEO
CD
TUNER
J501
AEP, CIS, EE, G, IT, UK MODEL
C509 100p
C529 100p
R509 1k
R529 1k
R519 1M
R539 1M
C504 100p
C524 100p
R504 1k
R524 1k
R514 1M
R534 1M
C505 100p
C525 100p
R505 4.7k
R525 4.7k
R515 10k
R535 10k
C506 100p
C526 100p
R506 1k
R526 1k
R516 1M
R536 1M
IC503
MC14066BCP
SWITCH
VDD
VSS
7.7
7.8
-7.8
7.3
R558 10k
Q504 2SC2603
R557 1M
R559 100k
D555 1N4148M
-7.2
D553
R560 1M
Q504
B+
B-
R803 10k
D803 1N4148M
D804 D5SBA20
C804 0.1
C814 0.1
C805 4700 42V 50V
C815 4700 42V 50V
AUS, E, EA, HK, MX, JE, MY, SP MODEL
AC OFF DETECT ON/OFF
Q801 2SC2603
4.1
R813 10k
D813 1N4148M
R804 10k
R806 10k
CN601
AGND
R
+B
-B
L
AC-DET
OVERLOAD
②
POWER AMPLIFIER BOARD
CN311 BOARD
(Page 14)
R705 560 2W
RY701 24V
D702 1N4148M
R706 56k
R707 47k
C831 0.01
R711
R712
Q701 2SA1346 INVERTER
D701 1N4148M
CN11 7P
AG
AC
ACG
AUBUS GND
AUBUS
CN11
SYSTEM CONTROL
02


8
9
10
11
12
13
14
15
1
BOARD 】
IC601
MICMIX AMP
● IC BL
IC701
AUS, E, EA, HK, MX, MY, SP, JE MODEL
C604 47p
R603 47k
R604 47k
R605 47k
C603 100p
IC601 (1/2) M5218AP
C606 10 50V
R601 47k
C602 22000p
C601 680p
R602 47k 24k
AEP, CIS, EE, G, IT, UK MODEL
C605 47 16V
R606 100k
AUS, E, EA, HK, MX, MY, SP, JE MODEL
VSS
-7.8
7.7
-7.8
C651 680p
R652 24k 47k
AEP, CIS, EE, G, IT, UK MODEL
R656 100k
C655 47 16V
R651 47k
C652 22000p
C653 100p
R655 47k
R654 47k
C656 10 50V
R653 47k
IC601 (2/2) M5218AP
C654 47p
MIC
R607 100
B-
B+
AUS, E, EA, HK, MX, MY, SP, JE MODEL
CN801
HP-L
HP-GND
HP-R
SW2
SW1
L
MIC
L-AGND
AGND
R
A+7.5V
R-AGND
A-7.5V
DGND
D+5V
AC OFF MUTE
POWER RELAY
K-PON
AFUNC0
AFUNC1
AFUNC2
AUBUS GND
AUBUS
①
CN101
PANEL BOARD
(Page 12)
R551 10k
R552 10k
R553 10k
Q505 2SA1346
Q506 2SA1346
D551 1N4148M
D552 1N4148M
53 1N4148M
D554
R561 100
R563 100
R562 10k
R564 10k
-7.6
5.1
R554 100
R555 100
R556 100
Q501 2SC3400
Q502 2SC3400
Q503 2SC3400
Q501-503


PANEL BOARD
(Page 12)
DGND
D+5V
AC OFF MUTE
POWER RELAY
K-PON
AFUNC0
AFUNC1
AFUNC2
AUBUS GND
AUBUS
AUS, E, EA, HK, MX, MY, SP, JE MODEL
R551 10k
R552 10k
R553 10k
R554 100
R555 100
R556 100
R557 1M
R558 10k
R559 100k
R560 1M
R561 100
R562 10k
R563 100
R564 10k
Q504 2SC2603
Q505 2SA1346
Q506 2SA1346
D551 1N4148M
D552 1N4148M
D553 1N4148M
D554 1N4148M
D555 1N4148M
Q501 2SC3400
Q502 2SC3400
Q503 2SC3400
Q501-503 SWITCH
Q504-506 SWITCH
B+
B-
IC801
7.5V REG
IC801 M5F7807
R805 2.2k 1/2W
R807 2.2k 1/2W
C807 100 35V
C808 10 50V
C809 470 10V
D807 1N4148M
D817 1N4148M
C818 10 50V
C819 470 10V
R817 2.2k 1/2W
C817 100 35V
R815 2.2k 1/2W
IC811
-7.5V REG
IC811 M5F7907
IC802 M5F7805
IC802
+5V REG
D808 11E2
D818 11E2
C821 0.01
C822 1000 25V
C823 10 50V
C824 470 10V
C831 0.01
R711 1.2k
R712 1.2k
C711 47 50V
C712 47 50V
R721 1.2k
R722 1.2k
C721 47 50V
C722 47 50V
HK, MX, JE, MODEL
HK, MX, JE, MODEL
Q701 2SA1346 INVERTER
IC701 μPC1237HA
IC701
PROTECTOR
R701 10k
R702 100k
R703 12k
R704 47k
C701 220 10V
C702 220 10V
C703 2.2 50V
C704 100 10V
【SPEAKER BOARD】
TB401
FRONT-L
AGND
AGND
FRONT-R
CN701
CN401 EH4P-H
R401 10
R402 10
C401 0.1
C402 0.1
C451 0.1
C452 0.1
R451 10
R452 10
AEP, CIS, EE, G, IT, UK MODEL
【SECONDARY BOARD】
CN501
CN502
CN901 EH7P-H
CN902 EH3P-H
AC-P1
AC-APG
AC-P2
AC-S1
AC-SG
AC-S2
T901
POWER TRANSFORMER
F903 T2.0AL 250V
F904 T2.0AL 250V

• IC BLOCK DIAGRAM

IC701 μPC1237HA


OVER LOAD DET
OFFSET DET
LATCH/ AUTORESET
F/F
Vcc ON MUTE
AC OFF DET
Vco
1
2
3
4
5
6
7
8

Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.

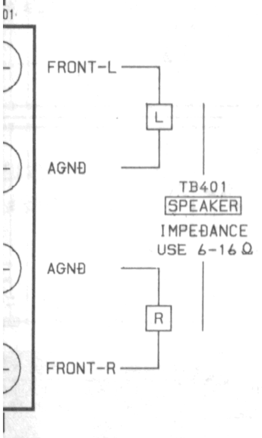
Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.

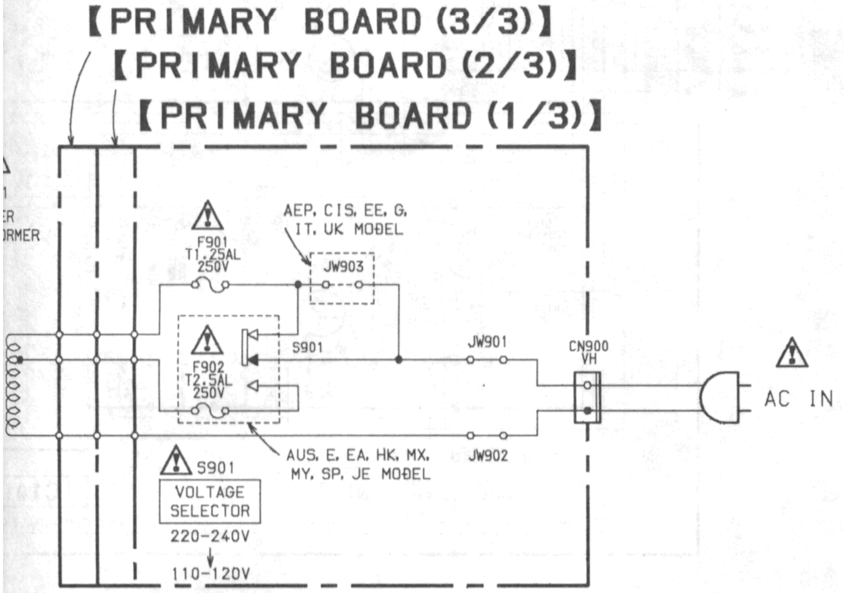
> **Note :** The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
> Replace only with part number specified.

- **B+** : B+ Line
- **B −** : B − Line
- Voltage a dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨
- Abbreviation

AUS	Australian
EA	Saudi Arabia
HK	Hong Kong
MX	Mexican
MY	Malaysia
SP	Singapore
JE	Tourist
EE	East European
G	German
IT	Italian



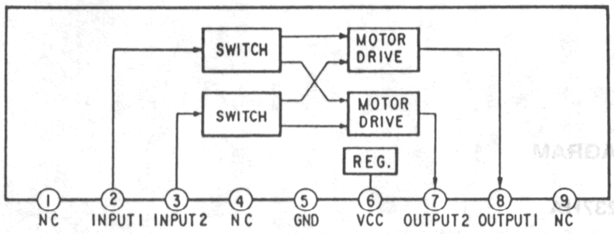
01
FRONT-L
L
AGND
TB401
SPEAKER
IMPEDANCE USE 6-16 Ω
AGND
R
FRONT-R



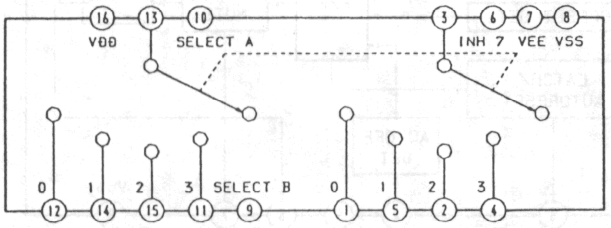
[PRIMARY BOARD (3/3)]
[PRIMARY BOARD (2/3)]
[PRIMARY BOARD (1/3)]
ER
RMER
F901
T1.25AL
250V
AEP, CIS, EE, G, IT, UK MODEL
JW903
F902
T2.5AL
250V
S901
JW901
CN900
VH
AC IN
JW902
AUS, E, EA, HK, MX, MY, SP, JE MODEL
S901
VOLTAGE SELECTOR
220-240V
110-120V

● IC BLOCK DIAGRAMS

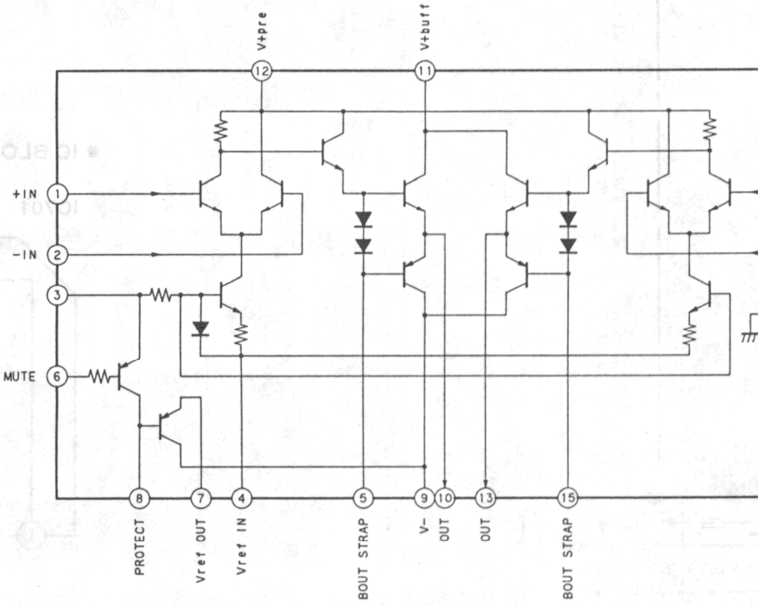
IC104 BA6208BCP


SWITCH
SWITCH
MOTOR DRIVE
MOTOR DRIVE
REG.
① NC
② INPUT1
③ INPUT2
④ NC
⑤ GND
⑥ VCC
⑦ OUTPUT2
⑧ OUTPUT1
⑨ NC

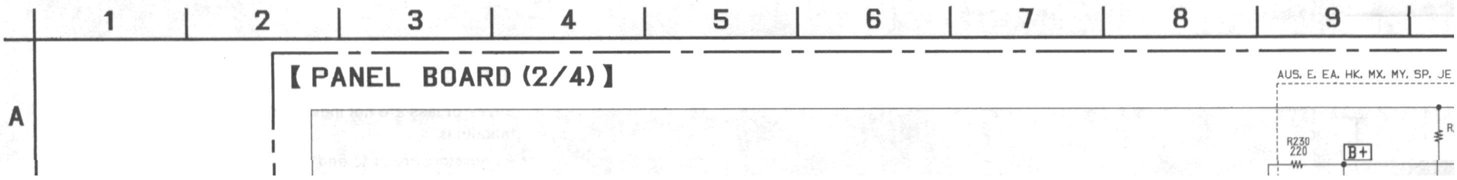
IC202 MC14052


⑯ VDD
⑬
⑩ SELECT A
③ INH ⑥ 7 ⑦ VEE ⑧ VSS
0 ⑫
1 ⑭
2 ⑮
3 ⑪
SELECT B ⑨
0 ①
1 ⑤
2 ②
3 ④

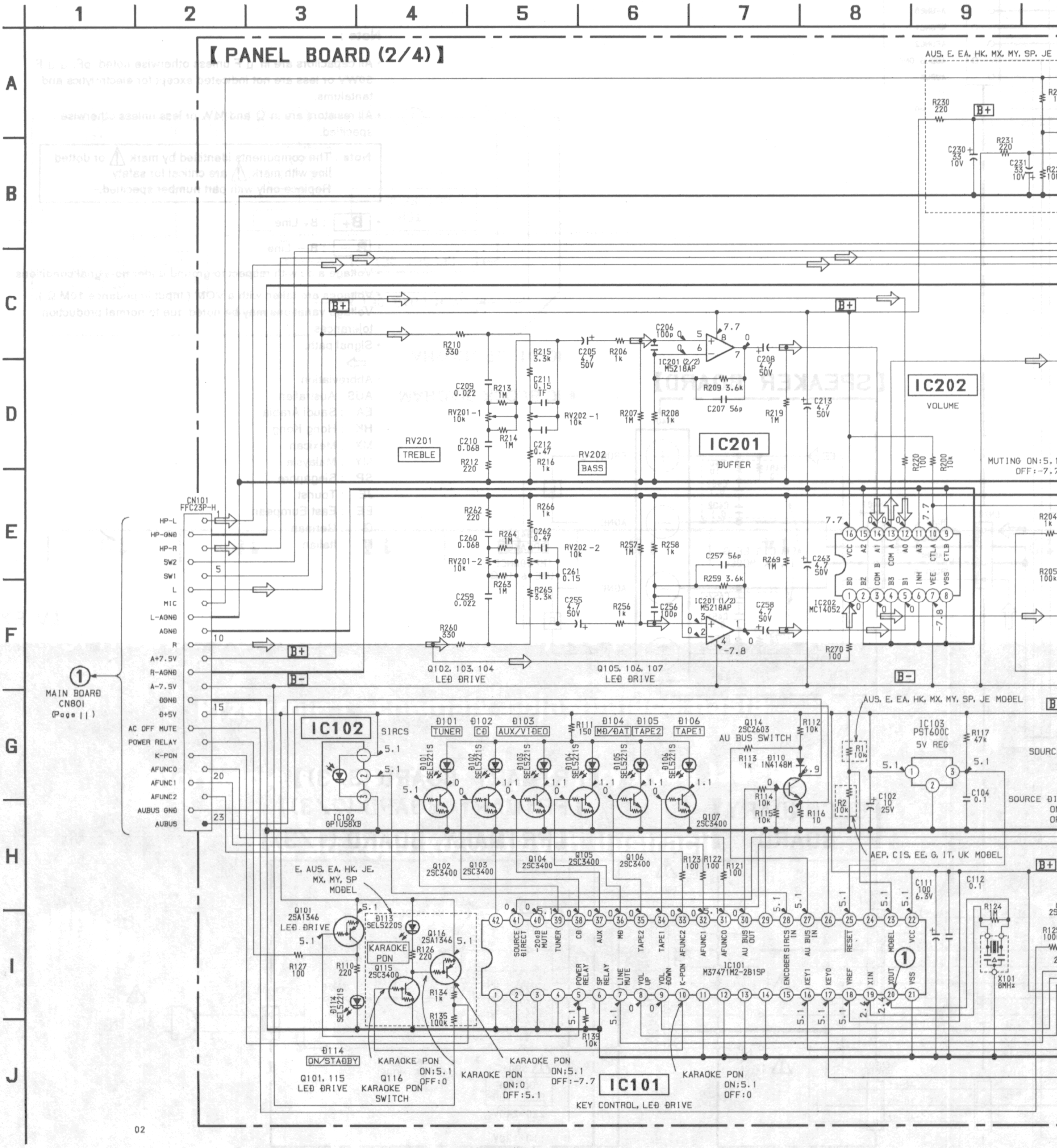
IC301 STK4152MK2 (E, AUS, EA, HK, JE, MX, MY, SP MODEL)

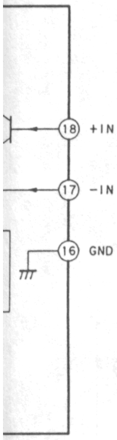

V+pre ⑫
V+buff ⑪
+IN ①
−IN ②
③
MUTE ⑥
⑧ PROTECT
⑦ Vref OUT
④ Vref IN
⑤ BOUT STRAP
⑨ V−
⑩ OUT
⑬ OUT
⑮ BOUT STRAP

2-4. SCHEMATIC DIAGRAM – PANEL SECTION –


1
2
3
4
5
6
7
8
9
A
【PANEL BOARD (2/4)】
AUS, E, EA, HK, MX, MY, SP, JE
R230 220
B+

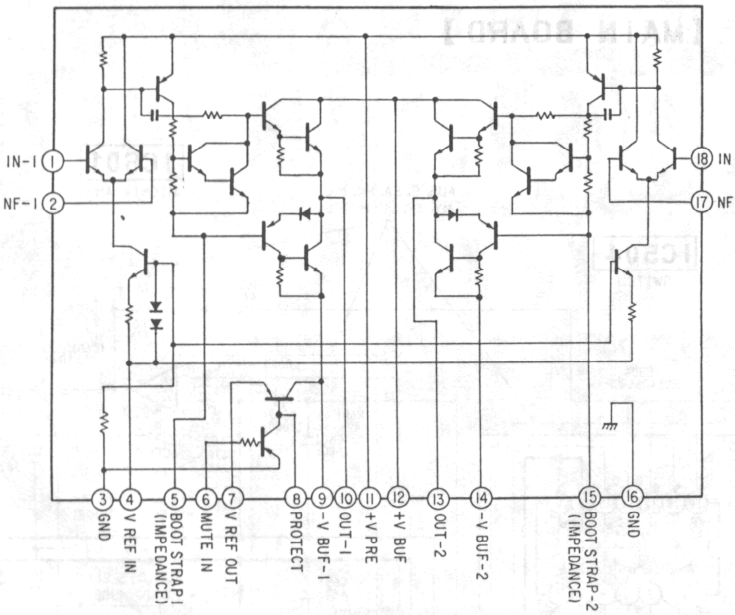
2-4. SCHEMATIC DIAGRAM – PANEL SECTION –


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
【PANEL BOARD (2/4)】
AUS, E, EA, HK, MX, MY, SP, JE
R230 220
C230 33 10V
R231 220
C231 33 10V
B+
B-
IC202
VOLUME
MUTING ON:5.1
OFF:-7.7
R204 1k
R205 100k
R210 330
R215 3.3k
C205 4.7 50V
R206 1k
C206 100p
IC201 (2/2) M5218AP
C208 4.7 50V
C209 0.022
R213 1M
C211 0.15 TF
RV201-1 10k
RV202-1 10k
R207 1M
R208 1k
R209 3.6k
C207 56p
R219 1M
C213 4.7 50V
C210 0.068
R214 1M
C212 0.47
RV201
TREBLE
RV202
BASS
R212 220
R216 1k
IC201
BUFFER
R220 100
R200 10k
7.7
-7.8
CN101 FFC23P-H
HP-L
HP-GND
HP-R
SW2
SW1
L
MIC
L-AGND
AGND
R
A+7.5V
R-AGND
A-7.5V
DGND
D+5V
AC OFF MUTE
POWER RELAY
K-PON
AFUNC0
AFUNC1
AFUNC2
AUBUS GND
AUBUS
①
MAIN BOARD CN801 (Page 11)
R262 220
R266 1k
C260 0.068
R264 1M
C262 0.47
RV201-2 10k
RV202-2 10k
R257 1M
R258 1k
C257 56p
R259 3.6k
R269 1M
C263 4.7 50V
C261 0.15
R263 1M
R265 3.3k
C259 0.022
C255 4.7 50V
R256 1k
C256 100p
IC201 (1/2) M5218AP
C258 4.7 50V
IC202 MC14052
VCC A2 A1 COM A A0 A3 CTLA CTLB
B0 B2 COM B B3 B1 INH VEE VSS
R260 330
R270 100
Q102, 103, 104
LED DRIVE
Q105, 106, 107
LED DRIVE
IC102
SIRCS
5.1
IC102 GP1U58XB
D101 TUNER
D102 CD
D103 AUX/VIDEO
R111 150
D104 MD/DAT
D105 TAPE2
D106 TAPE1
SEL5221S
Q114 2SC2603
AU BUS SWITCH
R112 10k
R113 1k
D110 1N4148M
R114 10k
R115 10k
R116 10
Q107 2SC3400
AUS, E, EA, HK, MX, MY, SP, JE MODEL
R1 10k
R2 10k
C102 10 25V
IC103 PST600C
5V REG
R117 47k
C104 0.1
SOURCE
SOURCE DI
AEP, CIS, EE, G, IT, UK MODEL
Q102 2SC3400
Q103 2SC3400
Q104 2SC3400
Q105 2SC3400
Q106 2SC3400
R123 100
R122 100
R121 100
C111 100 6.3V
C112 0.1
R124 1M
R125 100k
X101 8MHz
E, AUS, EA, HK, JE, MX, MY, SP MODEL
Q101 2SA1346
LED DRIVE
D113 SEL5220S
KARAOKE PON
Q116 2SA1346
R126 220
R127 100
R110 220
Q115 2SC3400
D114 SEL5221S
R134 1k
R135 100k
R139 10k
SOURCE DIRECT
-20dB MUTE
TUNER
CD
AUX
MD
TAPE2
TAPE1
AFUNC2
AFUNC1
AFUNC0
AU BUS OUT
ENCODER SIRCS IN
AU BUS IN
RESET
MODEL
VCC
POWER RELAY
SP RELAY
LINE MUTE
VOL UP
VOL DOWN
K-PON
KEY1
KEY0
VREF
XIN
XOUT
VSS
IC101 M37471M2-281SP
D114 ON/STANDBY
Q101, 115 LED DRIVE
Q116 KARAOKE PON SWITCH
KARAOKE PON ON:5.1 OFF:0
KARAOKE PON ON:0 OFF:5.1
KARAOKE PON ON:5.1 OFF:-7.7
IC101
KEY CONTROL, LED DRIVE
KARAOKE PON ON:5.1 OFF:0
02



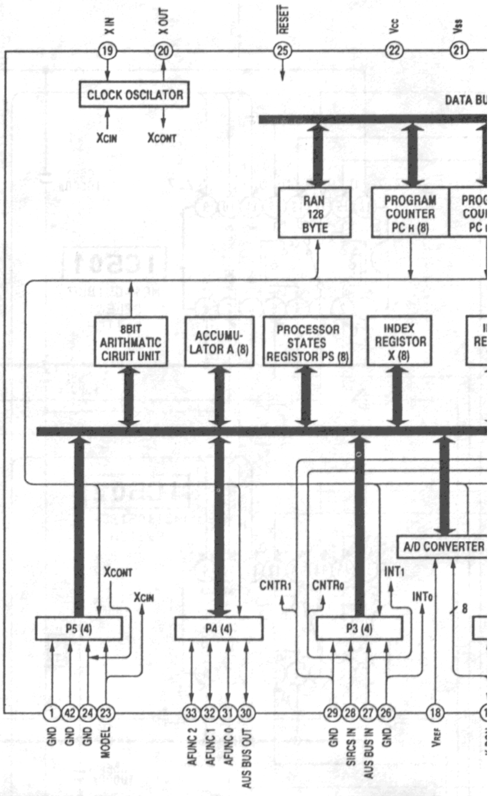
18 +IN
17 -IN
16 GND

IC301 STK4162MK2 (AEP, UK, G, IT, EE, CIS MODEL)

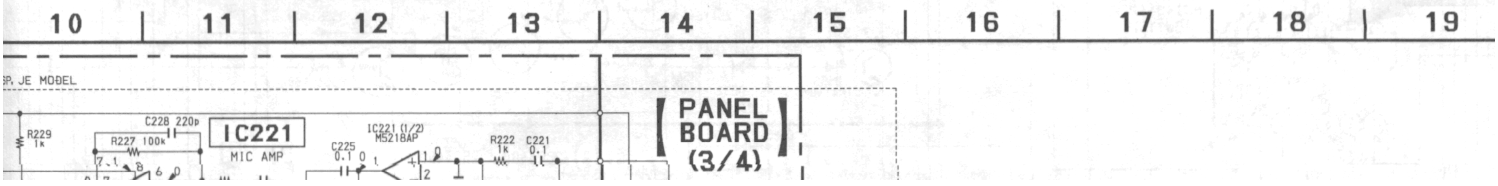


IN-1 1
NF-1 2
18 IN-2
17 NF-2
3 GND
4 V REF IN
5 BOOT STRAP1 (IMPEDANCE)
6 MUTE IN
7 V REF OUT
8 PROTECT
9 -V BUF-1
10 OUT-1
11 +V PRE
12 +V BUF
13 OUT-2
14 -V BUF-2
15 BOOT STRAP-2 (IMPEDANCE)
16 GND

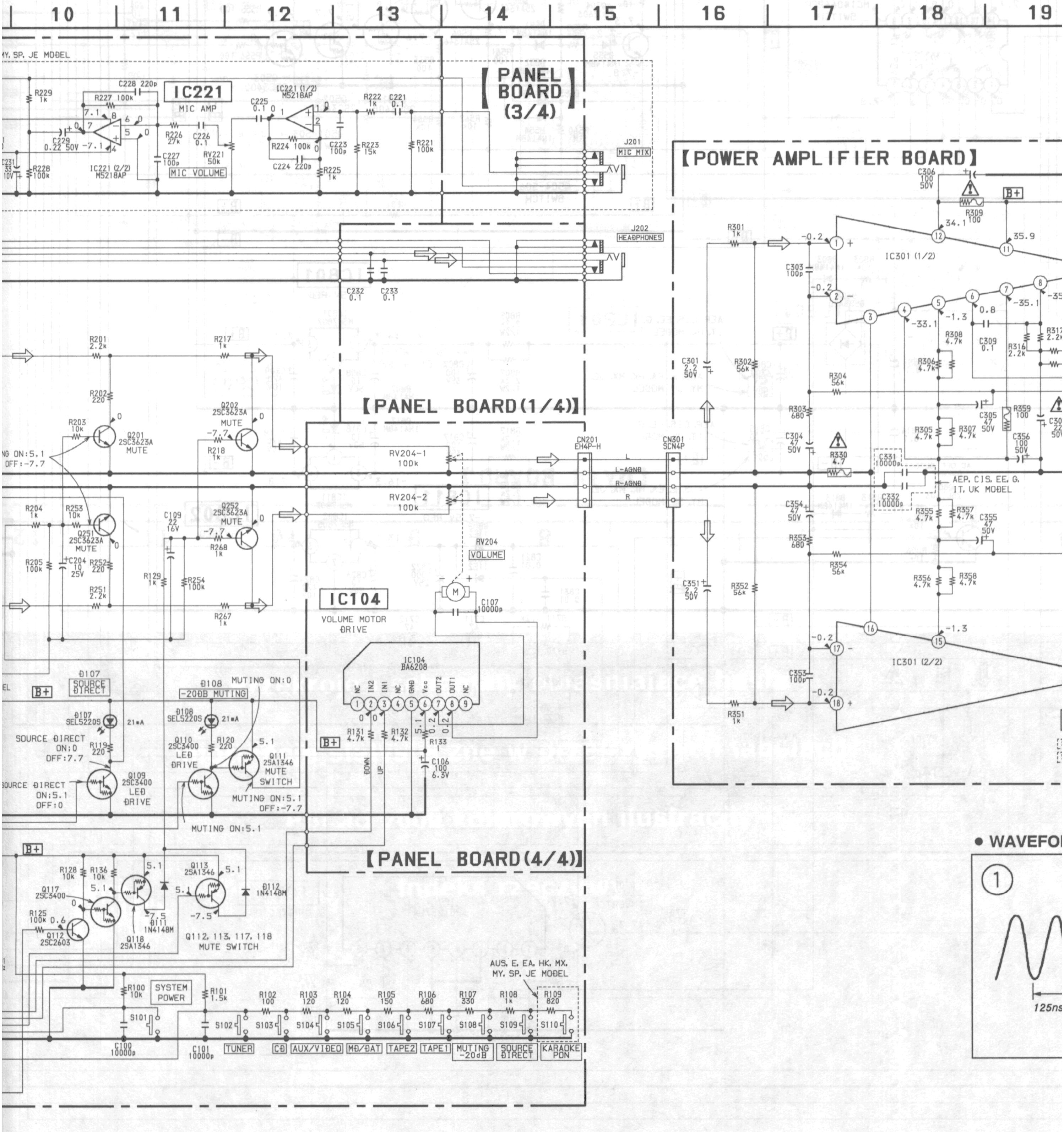
IC101 M37471MZ-281SP

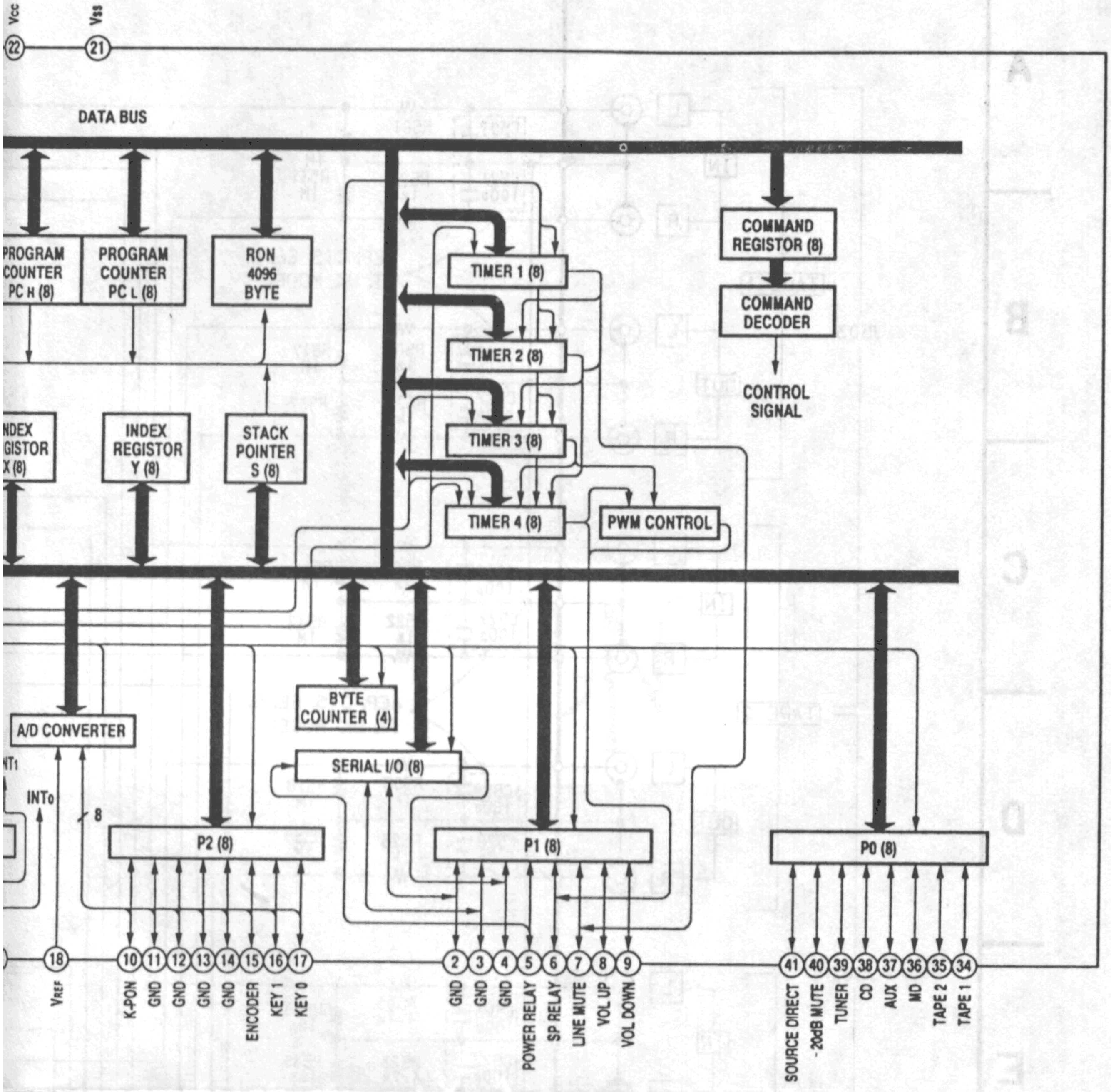


X IN 19
X OUT 20
RESET 25
Vcc 22
Vss 21
CLOCK OSCILATOR
XCIN
XCONT
DATA BU
RAN 128 BYTE
PROGRAM COUNTER PC H (8)
PROG COUN PC
8BIT ARITHMATIC CIRUIT UNIT
ACCUMU-LATOR A (8)
PROCESSOR STATES REGISTOR PS (8)
INDEX REGISTOR X (8)
I RE
A/D CONVERTER
XCONT
XCIN
CNTR1
CNTR0
INT1
INT0
8
P5 (4)
P4 (4)
P3 (4)
1 GND
42 GND
24 GND
23 MODEL
33 AFUNC 2
32 AFUNC 1
31 AFUNC 0
30 AUS BUS OUT
29 GND
28 SIRCS IN
27 AUS BUS IN
26 GND
18 VREF

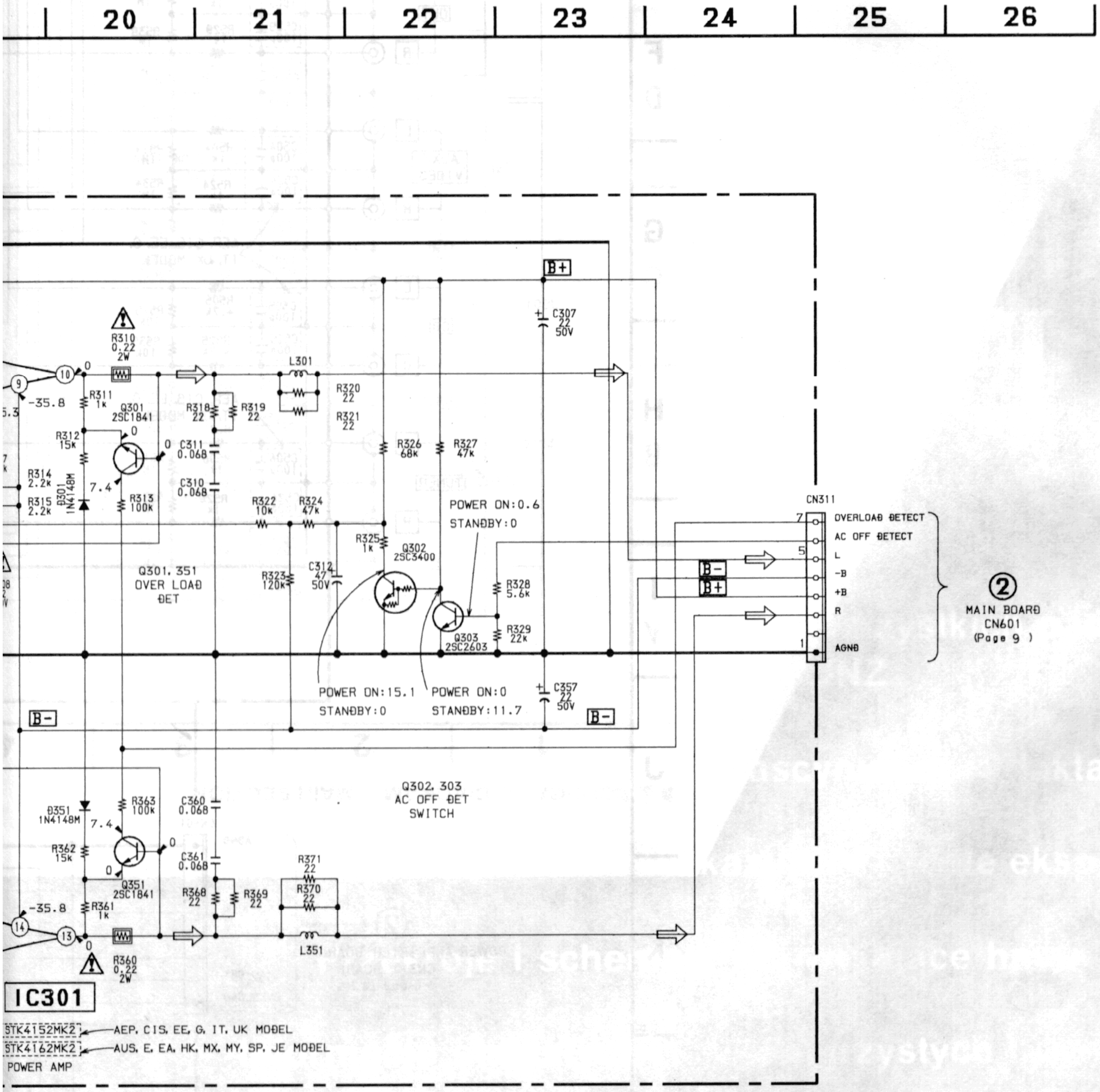


10
11
12
13
14
15
16
17
18
19
SP, JE MODEL
R229 1k
C228 220p
R227 100k
IC221
MIC AMP
C225 0.1
IC221 (1/2) M5218AP
R222 1k
C221 0.1
PANEL BOARD (3/4)

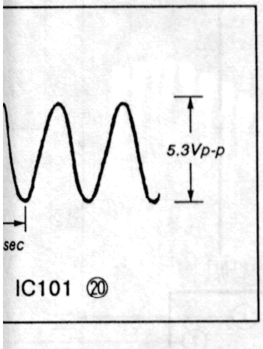

10
11
12
13
14
15
16
17
18
19
MY, SP, JE MODEL
IC221
MIC AMP
R229 1k
C228 220p
R227 100k
C229 0.22 50V
IC221 (2/2) M5218AP
R228 100k
R226 27k
C226 0.1
C227 100p
RV221 50k
MIC VOLUME
C225 0.1
IC221 (1/2) M5218AP
R224 100k
C224 220p
C223 100p
R223 15k
R225 1k
R222 1k
C221 0.1
R221 100k
【PANEL BOARD (3/4)】
J201
MIC MIX
J202
HEADPHONES
C232 0.1
C233 0.1
【POWER AMPLIFIER BOARD】
C306 100 50V
R309 100
B+
IC301 (1/2)
IC301 (2/2)
R301 1k
C303 100p
C301 2.2 50V
R302 56k
R304 56k
R303 680
C304 47 50V
R330 4.7
C331 10000p
C332 10000p
AEP, CIS, EE, G, IT, UK MODEL
R305 4.7k
R307 4.7k
R306 4.7k
R308 4.7k
C309 0.1
R316 2.2k
C305 47 50V
R359 100
C356 100 50V
C354 47 50V
R353 680
R355 4.7k
R357 4.7k
C355 47 50V
R354 56k
C351 2.2 50V
R352 56k
R356 4.7k
R358 4.7k
C353 100p
R351 1k
34.1
35.9
-35.1
-33.1
-1.3
0.8
-0.2
CN201 EH4P-H
CN301 SCN4P
L-AGND
R-AGND
L
R
【PANEL BOARD (1/4)】
R201 2.2k
R202 220
R203 10k
Q201 2SC3623A MUTE
R217 1k
Q202 2SC3623A MUTE
R218 1k
ON:5.1
OFF:-7.7
RV204-1 100k
RV204-2 100k
R204 1k
R253 10k
Q251 2SC3623A MUTE
R205 100k
C204 10 25V
R252 220
R251 2.2k
C109 22 16V
Q252 2SC3623A MUTE
R268 1k
R129 1k
R254 100k
R267 1k
RV204
VOLUME
IC104
VOLUME MOTOR DRIVE
C107 10000p
M
IC104 BA6208
NC IN2 IN1 NC GND Vcc OUT2 OUT1 NC
R131 4.7k
R132 4.7k
R133 1
C106 100 6.3V
DOWN
UP
D107
SOURCE DIRECT
D107 SEL5220S
21mA
SOURCE DIRECT ON:0 OFF:7.7
R119 220
Q109 2SC3400 LED DRIVE
SOURCE DIRECT ON:5.1 OFF:0
D108
-20dB MUTING
MUTING ON:0
D108 SEL5220S
Q110 2SC3400 LED DRIVE
R120 220
Q111 2SA1346 MUTE SWITCH
MUTING ON:5.1 OFF:-7.7
MUTING ON:5.1
【PANEL BOARD (4/4)】
R128 10k
R136 10k
Q117 2SC3400
R125 100k
Q112 2SC2603
Q118 2SA1346
D111 1N4148M
Q113 2SA1346
D112 1N4148M
Q112, 113, 117, 118 MUTE SWITCH
R100 10k
SYSTEM POWER
S101
C100 10000p
R101 1.5k
C101 10000p
R102 100
R103 120
R104 120
R105 150
R106 680
R107 330
R108 1k
R109 820
AUS, E, EA, HK, MX, MY, SP, JE MODEL
S102 S103 S104 S105 S106 S107 S108 S109 S110
TUNER
CD
AUX/VIDEO
MD/DAT
TAPE2
TAPE1
MUTING -20dB
SOURCE DIRECT
KARAOKE PON
• WAVEFO
①
125ns


Vcc
Vss
22
21
DATA BUS
PROGRAM COUNTER PC H (8)
PROGRAM COUNTER PC L (8)
RON 4096 BYTE
COMMAND REGISTOR (8)
COMMAND DECODER
CONTROL SIGNAL
TIMER 1 (8)
TIMER 2 (8)
TIMER 3 (8)
TIMER 4 (8)
PWM CONTROL
INDEX REGISTOR X (8)
INDEX REGISTOR Y (8)
STACK POINTER S (8)
A/D CONVERTER
INT1
INT0
8
BYTE COUNTER (4)
SERIAL I/O (8)
P2 (8)
P1 (8)
P0 (8)
18
VREF
10 K-PON
11 GND
12 GND
13 GND
14 GND
15 ENCODER
16 KEY 1
17 KEY 0
2 GND
3 GND
4 GND
5 POWER RELAY
6 SP RELAY
7 LINE MUTE
8 VOL UP
9 VOL DOWN
41 SOURCE DIRECT
40 -20dB MUTE
39 TUNER
38 CD
37 AUX
36 MD
35 TAPE 2
34 TAPE 1

19 | 20 | 21 | 22 | 23 | 24


20
21
22
23
24
25
26
R310
0.22
2W
L301
R320
22
R321
22
R311
1k
Q301
2SC1841
R318
22
R319
22
-35.8
0
R312
15k
C311
0.068
R326
68k
R327
47k
R314
2.2k
R315
2.2k
D301
1N4148M
7.4
R313
100k
C310
0.068
R322
10k
R324
47k
POWER ON:0.6
STANDBY:0
CN311
R325
1k
Q302
2SC3400
OVERLOAD DETECT
AC OFF DETECT
L
-B
+B
R
AGND
Q301, 351
OVER LOAD
DET
R323
120k
C312
47
50V
R328
5.6k
R329
22k
Q303
2SC2603
② MAIN BOARD
CN601
(Page 9)
B+
C307
22
50V
B−
B+
B−
B−
POWER ON:15.1
STANDBY:0
POWER ON:0
STANDBY:11.7
C357
22
50V
Q302, 303
AC OFF DET
SWITCH
D351
1N4148M
R363
100k
C360
0.068
R362
15k
C361
0.068
Q351
2SC1841
R371
22
R370
22
R368
22
R369
22
-35.8
R361
1k
L351
R360
0.22
2W
IC301
STK4152MK2
AEP, CIS, EE, G, IT, UK MODEL
STK4162MK2
AUS, E, EA, HK, MX, MY, SP, JE MODEL
POWER AMP

RM



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ─[▨]─ : nonflammable resistor.
- ─[∿]─ : fusible resistor.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- **B+** : B+ Line
- **B−** : B− Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

- Signal path.
  ⇨
- Abbreviation

AUS	: Australian
EA	: Saudi Arabia
HK	: Hong Kong
MX	: Mexican
MY	: Malaysia
SP	: Singapore
JE	: Tourist
EE	: East European
G	: German
IT	: Italian

SECTION 3
EXPLODED VIEWS

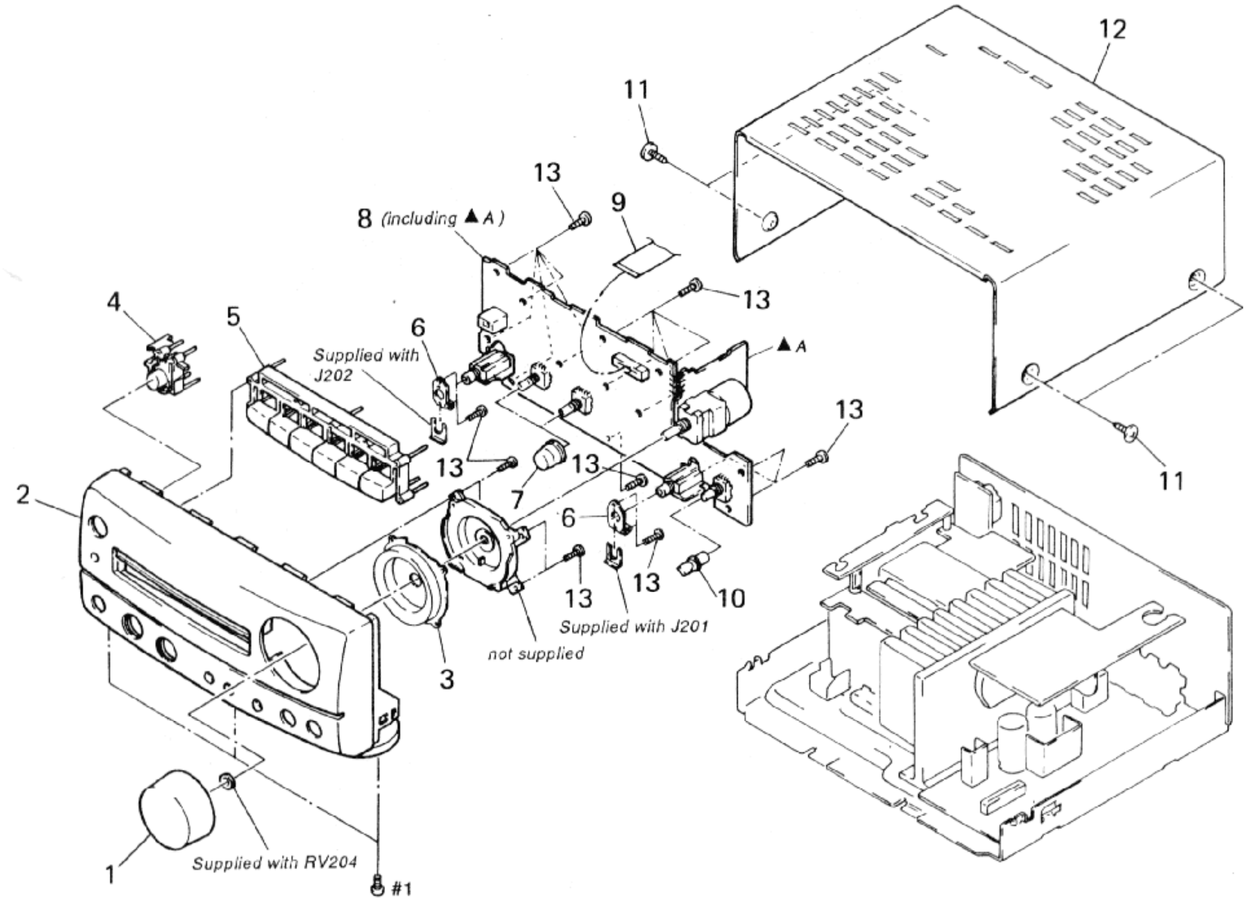
NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ∗ "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (‡ mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation

AUS	: Australian	SP	: Singapore
EA	: Saudi Arabia	JE	: Tourist
HK	: Hong Kong	EE	: East European
MX	: Mexican	G	: German
MY	: Malaysia	IT	: Italian

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

3-1. FRONT PANEL SECTION

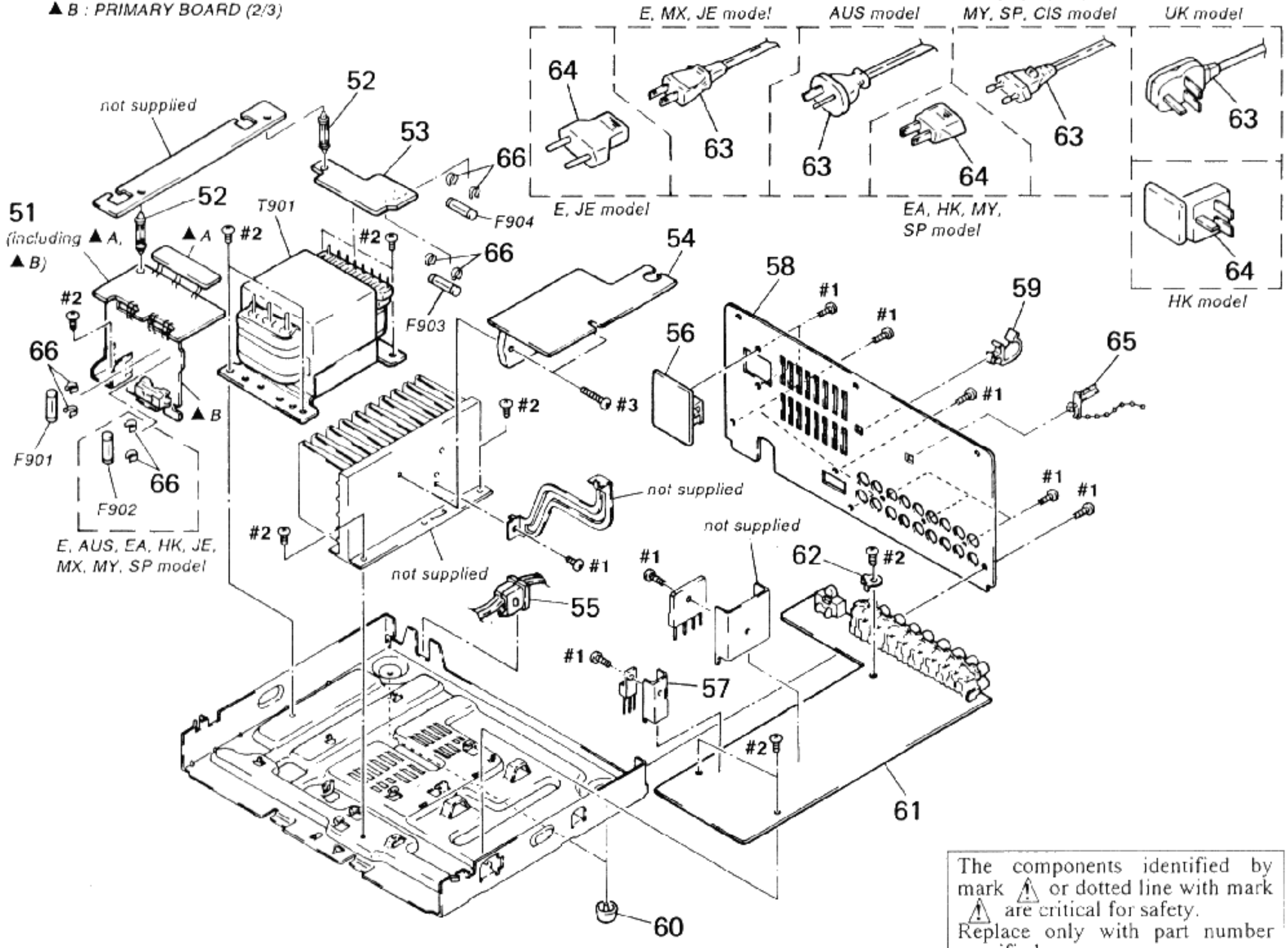


Ref. No.	Part No.	Description	Remark
1	4-970-944-01	KNOB (VOL)	
2	X-4945-434-1	PANEL ASSY, FRONT	(AEP, UK, G, IT, EE, CIS)
2	X-4945-435-1	PANEL ASSY, FRONT	(E, AUS, EA, HK, JE, MX, MY, SP)
3	4-970-967-01	PLATE (VOL), ORNAMENTAL	
4	4-970-962-01	BUTTON (POWER)	
5	4-970-942-01	BUTTON (FUNC)	
∗ 6	4-970-946-01	BRACKET (HP)	
7	4-970-965-01	KNOB (TONE)	
∗ 8	A-4371-988-A	PANEL BOARD, COMPLETE	(AEP, UK, G, IT, EE, CIS)
∗ 8	A-4371-989-A	PANEL BOARD, COMPLETE	(E, AUS, EA, HK, JE, MX, MY, SP)
∗ 9	1-769-784-11	WIRE (FLAT TYPE) (23 CORE)	
10	4-970-966-0	KNOB (K)	
11	3-363-099-01	SCREW (CASE 3 TP2)	
12	3-919-558-71	CASE	
13	4-951-620-01	SCREW (2.6×8), +BVTP	

3-2. CHASSIS SECTION

▲A : *PRIMARY BOARD (3/3)*

▲B : *PRIMARY BOARD (2/3)*


E, MX, JE model
AUS model
AEP, G, IT, EA, HK, EE, MY, SP, CIS model
UK model
64
63
63
63
63
64
66
E, JE model
EA, HK, MY, SP model
64
HK model
52
not supplied
53
52
51
(including ▲A, ▲B)
T901
▲A
#2
#2
F904
66
F903
54
58
#1
#1
59
65
56
#3
#2
#1
#2
66
▲B
F901
66
F902
E, AUS, EA, HK, JE, MX, MY, SP model
not supplied
not supplied
#1
#1
#2
not supplied
#1
62
#2
#1
55
#1
57
#2
61
60

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 51	1-654-762-11	PRIMARY BOARD	
* 52	4-385-948-01	HOLDER, PCB	
* 53	1-654-763-11	SECONDARY BOARD	
* 54	A-4371-980-A	POWER AMPLIFIER BOARD, COMPLETE (AEP, UK, G, IT, EE, CIS)	
* 54	A-4371-981-A	POWER AMPLIFIER BOARD, COMPLETE (E, AUS, EA, HK, JE, MX, MY, SP)	
* 55	3-703-244-00	BUSHING (2104), CORD (AEP, UK, G, IT, AUS, EA, EE, HK, MY, SP, CIS)	
* 55	3-703-571-11	BUSHING (S) (4516), CORD (E, JE, MX)	
* 56	1-654-761-11	SPEAKER BOARD	
* 57	3-309-144-21	HEAT SINK	
* 58	4-970-969-01	PANEL, BACK (AEP2)	
* 58	4-970-969-11	PANEL, BACK (G)	
* 58	4-970-969-21	PANEL, BACK (UK)	
* 58	4-970-969-31	PANEL, BACK (AEP, CIS)	
* 58	4-970-969-41	PANEL, BACK (UK1)	
* 58	4-970-969-51	PANEL, BACK (EE)	
* 58	4-970-969-61	PANEL, BACK (IT)	
* 58	4-970-969-71	PANEL, BACK (E, EA, JE, MX, MY, SP)	
* 58	4-970-969-81	PANEL, BACK (AUS)	
* 58	4-970-969-91	PANEL, BACK (HK)	
* 59	4-949-235-01	HOOK (AEP, E, G, IT, EA, EE, JE, MX, MY, SP, CIS)	

Ref. No.	Part No.	Description	Remark
60	4-965-822-01	FOOT	
* 61	A-4371-978-A	MAIN BOARD, COMPLETE (AEP, UK, G, IT, EE, CIS)	
* 61	A-4371-979-A	MAIN BOARD, COMPLETE (E, AUS, EA, HK, JE, MX, MY, SP)	
* 62	4-942-204-01	PLATE, GROUND	
⚠63	1-574-902-11	CORD, POWER (E, JE, MX)	
⚠63	1-575-651-11	CORD, POWER (AEP, G, IT, EA, EE, HK, MY, SP, CIS)	
⚠63	1-690-608-11	CORD, POWER (AUS)	
⚠63	1-696-570-21	CORD, POWER (UK)	
⚠64	1-569-007-11	ADAPTER, CONVERSION 2P (E, JE)	
⚠64	1-569-008-11	ADAPTER, CONVERSION 2P (EA, HK, MY, SP)	
⚠64	1-770-019-11	ADAPTOR, CONVERSION (HK)	
65	4-956-370-02	BAND, PLUG FIXED (UK, AUS, HK)	
66	1-533-293-11	FUSE HOLDER	
⚠T901	1-427-700-11	TRANSFORMER, POWER (E, AUS, EA, HK, JE, MX, MY, SP)	
⚠T901	1-427-701-11	TRANSFORMER, POWER (AEP, UK, G, IT, EE, CIS)	
⚠F902	1-532-286-00	FUSE (3.15A/250V) (E, AUS, EA, HK, JE, MX, MY, SP)	
⚠F903	1-532-203-00	FUSE (2A/250V)	
⚠F904	1-532-203-00	FUSE (2A/250V)	

MAIN

SECTION 4
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

- Abbreviation
  AUS : Australian
  EA : Saudi Arabia
  HK : Hong Kong
  MX : Mexican
  MY : Malaysia
  SP : Singapore
  JE : Tourist
  EE : East European
  G : German
  IT : Italian

	Ref. No.	Part No.	Description	Remark
*		A-4371-978-A	MAIN BOARD, COMPLETE	(AEP, UK, G, IT, EE, CIS)
*		A-4371-979-A	MAIN BOARD, COMPLETE	(E, AUS, EA, HK, JE, MX, MY, SP)
			******************	
*		3-309-144-21	HEAT SINK	
*		4-942-204-01	PLATE, GROUND	
			< CAPACITOR >	
	C501-509	1-162-282-31	CERAMIC	100PF 10% 50V (AEP, UK, G, IT, EE, CIS)
	C521-529	1-162-282-31	CERAMIC	100PF 10% 50V (AEP, UK, G, IT, EE, CIS)
	C551-554	1-162-306-11	CERAMIC	0.01uF 30% 16V
	C601	1-162-292-31	CERAMIC	680PF 10% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C602	1-161-494-00	CERAMIC	0.022uF 25V (E, AUS, EA, HK, JE, MX, MY, SP)
	C603	1-162-282-31	CERAMIC	100PF 10% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C604	1-162-215-31	CERAMIC	47PF 5% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C605	1-126-022-11	ELECT	47uF 20% 16V
	C606	1-126-059-11	ELECT	10uF 20% 50V
	C651	1-162-292-31	CERAMIC	680PF 10% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C652	1-161-494-00	CERAMIC	0.022uF 25V (E, AUS, EA, HK, JE, MX, MY, SP)
	C653	1-162-282-31	CERAMIC	100PF 10% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C654	1-162-215-31	CERAMIC	47PF 5% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C655	1-126-022-11	ELECT	47uF 20% 16V
	C656	1-126-059-11	ELECT	10uF 20% 50V
	C701	1-126-101-11	ELECT	100uF 20% 16V
	C702	1-126-101-11	ELECT	100uF 20% 16V
	C703	1-126-161-11	ELECT	2.2uF 20% 50V
	C704	1-124-994-11	ELECT	100uF 20% 10V
	C711	1-124-910-11	ELECT	47uF 20% 50V
	C712	1-124-910-11	ELECT	47uF 20% 50V
	C721	1-124-910-11	ELECT	47uF 20% 50V
	C722	1-124-910-11	ELECT	47uF 20% 50V
	C804	1-136-165-00	FILM	0.1uF 5% 50V
	C805	1-126-224-11	ELECT	4700uF 20% 42V (AEP, UK, G, IT, EE, CIS)
	C805	1-126-138-11	ELECT	4700uF 20% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C807	1-124-122-11	ELECT	100uF 20% 50V
	C808	1-126-059-11	ELECT	10uF 20% 50V
	C809	1-124-997-11	ELECT	470uF 20% 10V
	C814	1-136-165-00	FILM	0.1uF 5% 50V
	C815	1-126-224-11	ELECT	4700uF 20% 42V (AEP, UK, G, IT, EE, CIS)
	C815	1-126-138-11	ELECT	4700uF 20% 50V (E, AUS, EA, HK, JE, MX, MY, SP)
	C817	1-124-122-11	ELECT	100uF 20% 50V
	C818	1-126-059-11	ELECT	10uF 20% 50V
	C819	1-124-997-11	ELECT	470uF 20% 10V
	C821	1-136-153-00	FILM	0.01uF 5% 50V
	C822	1-126-942-61	ELECT	1000uF 20% 25V
	C823	1-126-059-11	ELECT	10uF 20% 50V
	C824	1-124-997-11	ELECT	470uF 20% 10V
	C831	1-136-153-00	FILM	0.01uF 5% 50V
			< CONNECTOR >	
	CN11	1-770-158-31	SOCKET, CONNECTOR 7P (SYSTEM CONTROL)	
	CN501	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
	CN601	1-691-769-11	PLUG (MICRO CONNECTOR) 7P	
*	CN701	1-564-507-11	PLUG, CONNECTOR 4P	
*	CN801	1-568-839-11	SOCKET, CONNECTOR 23P	

MAIN

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D551-554	8-719-987-63	DIODE 1N4148M	
D701	8-719-987-63	DIODE 1N4148M	
D702	8-719-987-63	DIODE 1N4148M	
D803	8-719-987-63	DIODE 1N4148M	
D804	8-719-510-68	DIODE D5SBA20F01	
D807	8-719-987-63	DIODE 1N4148M	
D808	8-719-200-02	DIODE 10E2	
D813	8-719-987-63	DIODE 1N4148M	
D817	8-719-987-63	DIODE 1N4148M	
D818	8-719-200-02	DIODE 10E2	
		< IC >	
IC501	8-759-000-47	IC MC14051BCP	
IC502	8-759-000-47	IC MC14051BCP	
IC503	8-759-000-49	IC MC14066BCP	
IC504	8-759-000-49	IC MC14066BCP	(E, AUS, EA, HK, JE, MX, MY, SP)
IC601	8-759-634-51	IC M5218AP	(E, AUS, EA, HK, JE, MX, MY, SP)
IC601	8-759-167-88	IC NJM4565D	
IC701	8-759-111-68	IC uPC1237HA	
IC801	8-759-604-86	IC M5F7807L	
IC802	8-759-231-53	IC TA7805S	
IC811	8-759-604-90	IC M5F7907L	
		< JACK >	
J501	1-770-015-11	JACK, PIN 6P (TUNER/CD/AUX/VIDEO INPUT)	
J502	1-770-015-11	JACK, PIN 6P (MD/DAT INPUT/OUTPUT, TAPE 2 OUTPUT)	
J503	1-770-015-11	JACK, PIN 6P (TAPE 1 INPUT/OUTPUT, TAPE 2 INPUT)	
		< TRANSISTOR >	
Q501-503	8-729-900-36	TRANSISTOR DTC124ES	
Q504	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q505	8-729-900-63	TRANSISTOR DTA124ES	
Q506	8-729-900-63	TRANSISTOR DTA124ES	
Q701	8-729-900-63	TRANSISTOR DTA124ES	
Q801	8-729-620-05	TRANSISTOR 2SC2603-EF	
		< RESISTOR >	
R501	1-249-417-11	CARBON 1K 5% 1/4W	
R502	1-249-417-11	CARBON 1K 5% 1/4W	
R503	1-249-425-11	CARBON 4.7K 5% 1/4W	
R504	1-249-417-11	CARBON 1K 5% 1/4W	
R505	1-249-425-11	CARBON 4.7K 5% 1/4W	
R506-509	1-249-417-11	CARBON 1K 5% 1/4W	
R511	1-247-903-00	CARBON 1M 5% 1/4W	
R512	1-247-903-00	CARBON 1M 5% 1/4W	
R513	1-249-429-11	CARBON 10K 5% 1/4W	
R514	1-247-903-00	CARBON 1M 5% 1/4W	
R515	1-249-429-11	CARBON 10K 5% 1/4W	
R516-519	1-247-903-00	CARBON 1M 5% 1/4W	
R521	1-249-417-11	CARBON 1K 5% 1/4W	
R522	1-249-417-11	CARBON 1K 5% 1/4W	
R523	1-249-425-11	CARBON 4.7K 5% 1/4W	
R524	1-249-417-11	CARBON 1K 5% 1/4W	
R525	1-249-425-11	CARBON 4.7K 5% 1/4W	
R526	1-249-417-11	CARBON 1K 5% 1/4W	
R527-529	1-249-417-11	CARBON 1K 5% 1/4W	
R531	1-247-903-00	CARBON 1M 5% 1/4W	
R532	1-247-903-00	CARBON 1M 5% 1/4W	
R533	1-249-429-11	CARBON 10K 5% 1/4W	
R534	1-247-903-00	CARBON 1M 5% 1/4W	
R535	1-249-429-11	CARBON 10K 5% 1/4W	
R536-539	1-247-903-00	CARBON 1M 5% 1/4W	
R551	1-249-429-11	CARBON 10K 5% 1/4W	
R552	1-249-429-11	CARBON 10K 5% 1/4W	
R553	1-249-429-11	CARBON 10K 5% 1/4W	
R554-556	1-247-807-31	CARBON 100 5% 1/4W	
R557	1-247-903-00	CARBON 1M 5% 1/4W	
R558	1-249-429-11	CARBON 10K 5% 1/4W	
R559	1-249-441-11	CARBON 100K 5% 1/4W	
R560	1-247-903-00	CARBON 1M 5% 1/4W	
R561	1-247-807-31	CARBON 100 5% 1/4W	
R562	1-249-429-11	CARBON 10K 5% 1/4W	
R563	1-247-807-31	CARBON 100 5% 1/4W	
R564	1-249-429-11	CARBON 10K 5% 1/4W	
R601	1-249-437-11	CARBON 47K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R602	1-247-864-11	CARBON 24K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R602	1-249-437-11	CARBON 47K 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
R603	1-249-437-11	CARBON 47K 5% 1/4W	
R604	1-249-437-11	CARBON 47K 5% 1/4W	
R605	1-249-437-11	CARBON 47K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R606	1-249-441-11	CARBON 100K 5% 1/4W	
R607	1-247-807-31	CARBON 100 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description				Remark
R651	1-249-437-11	CARBON	47K	5%	1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R652	1-247-864-11	CARBON	24K	5%	1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R652	1-249-437-11	CARBON	47K	5%	1/4W	(AEP, UK, G, IT, EE, CIS)
R653	1-249-437-11	CARBON	47K	5%	1/4W	
R654	1-249-437-11	CARBON	47K	5%	1/4W	
R655	1-249-437-11	CARBON	47K	5%	1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R656	1-249-441-11	CARBON	100K	5%	1/4W	
R701	1-249-429-11	CARBON	10K	5%	1/4W	
R702	1-249-441-11	CARBON	100K	5%	1/4W	
R703	1-249-430-11	CARBON	12K	5%	1/4W	
R704	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R705	1-216-455-11	METAL OXIDE	560	5%	2W	F
R706	1-249-438-11	CARBON	56K	5%	1/4W	
R707	1-249-437-11	CARBON	47K	5%	1/4W	
R711	1-249-418-11	CARBON	1.2K	5%	1/4W	
R712	1-249-418-11	CARBON	1.2K	5%	1/4W	
R721	1-249-418-11	CARBON	1.2K	5%	1/4W	
R722	1-249-418-11	CARBON	1.2K	5%	1/4W	
R803	1-249-429-11	CARBON	10K	5%	1/4W	
R804	1-249-429-11	CARBON	10K	5%	1/4W	
R805	1-260-103-11	CARBON	2.2K	5%	1/2W	
R806	1-249-429-11	CARBON	10K	5%	1/4W	
R807	1-260-103-11	CARBON	2.2K	5%	1/2W	
R813	1-249-429-11	CARBON	10K	5%	1/4W	
R815	1-260-103-11	CARBON	2.2K	5%	1/2W	
R817	1-260-103-11	CARBON	2.2K	5%	1/2W	
		< RELAY >				
RY731	1-515-920-11	RELAY (24V)				
***						
*	A-4371-988-A	PANEL BOARD, COMPLETE				(AEP, UK, G, IT, EE, CIS)
*	A-4371-989-A	PANEL BOARD, COMPLETE				(E, AUS, EA, HK, JE, MX, MY, SP)
		**********************				
		< CAPACITOR >				
C100	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C101	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C102	1-126-096-11	ELECT	10uF	20%	35V	
C104	1-164-159-11	CERAMIC	0.1uF		50V	
C105	1-126-177-11	ELECT	100uF	20%	10V	
C107	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C109	1-124-234-00	ELECT	22uF	20%	16V	
C111	1-126-177-11	ELECT	100uF	20%	10V	
C112	1-164-159-11	CERAMIC	0.1uF		50V	
C204	1-126-096-11	ELECT	10uF	20%	35V	
C205	1-126-163-11	ELECT	4.7uF	20%	50V	
C206	1-162-282-31	CERAMIC	100PF	10%	50V	
C207	1-162-217-31	CERAMIC	56PF	5%	50V	
C208	1-126-163-11	ELECT	4.7uF	20%	50V	
C209	1-136-157-00	FILM	0.022uF	5%	50V	
C210	1-136-163-00	FILM	0.068uF	5%	50V	
C211	1-136-167-00	FILM	0.15uF	5%	50V	
C212	1-136-173-00	FILM	0.47uF	5%	50V	
C213	1-126-163-11	ELECT	4.7uF	20%	50V	
C221	1-164-159-11	CERAMIC	0.1uF		50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C223	1-162-282-31	CERAMIC	100PF	10%	50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C224	1-162-286-21	CERAMIC	220PF	10%	50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C225	1-164-159-11	CERAMIC	0.1uF		50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C226	1-164-159-11	CERAMIC	0.1uF		50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C227	1-162-282-31	CERAMIC	100PF	10%	50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C228	1-162-286-21	CERAMIC	220PF	10%	50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C229	1-124-454-11	ELECT	0.22uF	20%	50V	(E, AUS, EA, HK, JE, MX, MY, SP)
C230	1-124-229-00	ELECT	33uF	20%	10V	(E, AUS, EA, HK, JE, MX, MY, SP)
C231	1-124-229-00	ELECT	33uF	20%	10V	(E, AUS, EA, HK, JE, MX, MY, SP)
C232	1-164-159-11	CERAMIC	0.1uF		50V	
C233	1-164-159-11	CERAMIC	0.1uF		50V	
C255	1-126-163-11	ELECT	4.7uF	20%	50V	
C256	1-162-282-31	CERAMIC	100PF	10%	50V	
C257	1-162-217-31	CERAMIC	56PF	5%	50V	
C258	1-126-163-11	ELECT	4.7uF	20%	50V	
C259	1-136-157-00	FILM	0.022uF	5%	50V	
C260	1-136-163-00	FILM	0.068uF	5%	50V	
C261	1-136-167-00	FILM	0.15uF	5%	50V	
C262	1-136-173-00	FILM	0.47uF	5%	50V	
C263	1-126-163-11	ELECT	4.7uF	20%	50V	
		< CONNECTOR >				
* CN101	1-568-839-11	SOCKET, CONNECTOR 23P				
* CN201	1-564-507-11	PLUG, CONNECTOR 4P				
		< DIODE >				
D101	8-719-046-44	LED SEL5221S (TUNER)				

PANEL

Ref. No.	Part No.	Description	Remark
D102	8-719-046-44	LED SEL5221S (CD)	
D103	8-719-046-44	LED SEL5221S (AUX/VIDEO)	
D104	8-719-046-44	LED SEL5221S (MD/DAT)	
D105	8-719-046-44	LED SEL5221S (TAPE 2)	
D106	8-719-046-44	LED SEL5221S (TAPE 1)	
D107	8-719-812-44	LED TL0124 (SOURCE DIRECT)	
D108	8-719-812-44	LED TL0124 (MUTING -20dB)	
D110	8-719-987-63	DIODE 1N4148M	
D111	8-719-987-63	DIODE 1N4148M	
D112	8-719-987-63	DIODE 1N4148M	
D113	8-719-812-44	LED TL0124 (KARAOKE PON)	(E, AUS, EA, HK, JE, MX, MY, SP)
D114	8-719-046-44	LED SEL5221S (ON/STANDBY)	
		< IC >	
IC101	8-759-299-88	IC M37471M2-281SP	
IC102	8-749-923-11	IC GP1U58XB	
IC103	8-759-165-80	IC PST600C-T	
IC104	8-759-962-08	IC BA6208	
IC201	8-759-634-51	IC M5218AP	
IC202	8-759-000-48	IC MC14052BCP	
IC221	8-759-634-51	IC M5218AP	(E, AUS, EA, HK, JE, MX, MY, SP)
		< JACK >	
J201	1-507-854-00	JACK, PHONE (MIX MIC)	(E, AUS, EA, HK, JE, MX, MY, SP)
J202	1-507-854-11	JACK, PHONE (HEADPHONES)	
		< TRANSISTOR >	
Q101-107	8-729-900-36	TRANSISTOR DTC124ES	
Q109-111	8-729-900-36	TRANSISTOR DTC124ES	
Q112	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q113	8-729-900-63	TRANSISTOR DTA124ES	
Q114	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q115	8-729-900-36	TRANSISTOR DTC124ES	(E, AUS, EA, HK, JE, MX, MY, SP)
Q116	8-729-900-63	TRANSISTOR DTA124ES	(E, AUS, EA, HK, JE, MX, MY, SP)
Q117	8-729-900-36	TRANSISTOR DTC124ES	
Q118	8-729-900-63	TRANSISTOR DTA124ES	
Q201	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q202	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q251	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q252	8-729-141-30	TRANSISTOR 2SC3623A-LK	
		< RESISTOR >	
R1	1-249-429-11	CARBON 10K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R2	1-249-429-11	CARBON 10K 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
R100	1-249-429-11	CARBON 10K 5% 1/4W	
R101	1-249-419-11	CARBON 1.5K 5% 1/4W	
R102	1-247-807-31	CARBON 100 5% 1/4W	
R103	1-249-406-11	CARBON 120 5% 1/4W	
R104	1-249-406-11	CARBON 120 5% 1/4W	
R105	1-247-811-31	CARBON 150 5% 1/4W	
R106	1-249-415-11	CARBON 680 5% 1/4W	
R107	1-249-411-11	CARBON 330 5% 1/4W	
R108	1-249-417-11	CARBON 1K 5% 1/4W	
R109	1-249-416-11	CARBON 820 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R110	1-249-409-11	CARBON 220 5% 1/4W	
R111	1-247-811-31	CARBON 150 5% 1/4W	
R112	1-249-429-11	CARBON 10K 5% 1/4W	
R113	1-249-417-11	CARBON 1K 5% 1/4W	
R114	1-249-429-11	CARBON 10K 5% 1/4W	
R115	1-249-429-11	CARBON 10K 5% 1/4W	
R116	1-249-393-11	CARBON 10 5% 1/4W	
R117	1-249-437-11	CARBON 47K 5% 1/4W	
R119	1-249-409-11	CARBON 220 5% 1/4W	
R120	1-249-409-11	CARBON 220 5% 1/4W	
R121-123	1-247-807-31	CARBON 100 5% 1/4W	
R124	1-247-903-00	CARBON 1M 5% 1/4W	
R125	1-249-441-11	CARBON 100K 5% 1/4W	
R126	1-249-409-11	CARBON 220 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R127	1-247-807-31	CARBON 100 5% 1/4W	
R128	1-249-429-11	CARBON 10K 5% 1/4W	
R129	1-249-417-11	CARBON 1K 5% 1/4W	
R131	1-249-425-11	CARBON 4.7K 5% 1/4W	
R132	1-249-425-11	CARBON 4.7K 5% 1/4W	
R134	1-249-417-11	CARBON 1K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R135	1-249-441-11	CARBON 100K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R136	1-249-429-11	CARBON 10K 5% 1/4W	
R139	1-249-429-11	CARBON 10K 5% 1/4W	
R200	1-249-429-11	CARBON 10K 5% 1/4W	
R201	1-249-421-11	CARBON 2.2K 5% 1/4W	
R202	1-249-409-11	CARBON 220 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-417-11	CARBON 1K 5% 1/4W	
R205	1-249-441-11	CARBON 100K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R206	1-249-417-11	CARBON 1K 5% 1/4W	
R207	1-247-903-00	CARBON 1M 5% 1/4W	
R208	1-249-417-11	CARBON 1K 5% 1/4W	
R209	1-247-844-11	CARBON 3.6K 5% 1/4W	
R210	1-249-411-11	CARBON 330 5% 1/4W	
R212	1-249-409-11	CARBON 220 5% 1/4W	
R213	1-247-903-00	CARBON 1M 5% 1/4W	
R214	1-247-903-00	CARBON 1M 5% 1/4W	
R215	1-249-423-11	CARBON 3.3K 5% 1/4W	
R216	1-249-417-11	CARBON 1K 5% 1/4W	
R217	1-249-417-11	CARBON 1K 5% 1/4W	
R218	1-249-417-11	CARBON 1K 5% 1/4W	
R219	1-247-903-00	CARBON 1M 5% 1/4W	
R220	1-247-807-31	CARBON 100 5% 1/4W	
R221	1-249-441-11	CARBON 100K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R222	1-249-417-11	CARBON 1K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R223	1-249-431-11	CARBON 15K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R224	1-249-441-11	CARBON 100K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R225	1-249-417-11	CARBON 1K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R226	1-249-434-11	CARBON 27K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R227	1-249-441-11	CARBON 100K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R228	1-249-441-11	CARBON 100K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R229	1-249-417-11	CARBON 1K 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R230	1-249-409-11	CARBON 220 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R231	1-249-409-11	CARBON 220 5% 1/4W	(E, AUS, EA, HK, JE, MX, MY, SP)
R251	1-249-421-11	CARBON 2.2K 5% 1/4W	
R252	1-249-409-11	CARBON 220 5% 1/4W	
R253	1-249-429-11	CARBON 10K 5% 1/4W	
R254	1-249-441-11	CARBON 100K 5% 1/4W	
R256	1-249-417-11	CARBON 1K 5% 1/4W	
R257	1-247-903-00	CARBON 1M 5% 1/4W	
R258	1-249-417-11	CARBON 1K 5% 1/4W	
R259	1-247-844-11	CARBON 3.6K 5% 1/4W	
R260	1-249-411-11	CARBON 330 5% 1/4W	
R262	1-249-409-11	CARBON 220 5% 1/4W	
R263	1-247-903-00	CARBON 1M 5% 1/4W	
R264	1-247-903-00	CARBON 1M 5% 1/4W	
R265	1-249-423-11	CARBON 3.3K 5% 1/4W	
R266	1-249-417-11	CARBON 1K 5% 1/4W	
R267	1-249-417-11	CARBON 1K 5% 1/4W	
R268	1-249-417-11	CARBON 1K 5% 1/4W	
R269	1-247-903-00	CARBON 1M 5% 1/4W	
R270	1-247-807-31	CARBON 100 5% 1/4W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV201	1-223-810-11	RES, VAR, CARBON 10K/10K (TREBLE)	
RV202	1-223-810-11	RES, VAR, CARBON 10K/10K (BASS)	
RV204	1-223-811-11	RES, VAR, CARBON 100K/100K (VOLUME)	
RV221	1-223-816-11	RES, VAR, CARBON 50K (MIC VOLUME)	(E, AUS, EA, HK, JE, MX, MY, SP)

< SWITCH >

Ref. No.	Part No.	Description	Remark
S101	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)	
S102	1-554-303-21	SWITCH, TACTILE (TUNER)	
S103	1-554-303-21	SWITCH, TACTILE (CD)	
S104	1-554-303-21	SWITCH, TACTILE (AUX/VIDEO)	
S105	1-554-303-21	SWITCH, TACTILE (MD/DAT)	
S106	1-554-303-21	SWITCH, TACTILE (TAPE 2)	
S107	1-554-303-21	SWITCH, TACTILE (TAPE 1)	
S108	1-554-303-21	SWITCH, TACTILE (MUTING -20dB)	
S109	1-554-303-21	SWITCH, TACTILE (SOURCE DIRECT)	
S110	1-554-303-21	SWITCH, TACTILE (KARAOKE PON)	(E, AUS, EA, HK, JE, MX, MY, SP)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X101	1-579-125-11	VIBRATOR, CERAMIC (8MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-4371-980-A	POWER AMPLIFIER BOARD, COMPLETE	(AEP, UK, G, IT, EE, CIS)
*	A-4371-981-A	POWER AMPLIFIER BOARD, COMPLETE	(E, AUS, EA, HK, JE, MX, MY, SP)

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< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C301	1-126-161-11	ELECT 2.2uF 20% 50V	
C303	1-162-282-31	CERAMIC 100PF 10% 50V	
C304	1-124-910-11	ELECT 47uF 20% 50V	
C305	1-124-910-11	ELECT 47uF 20% 50V	
C306	1-124-122-11	ELECT 100uF 20% 50V	
C307	1-126-233-11	ELECT 22uF 20% 50V	
C308	1-126-233-11	ELECT 22uF 20% 50V	
C309	1-164-159-11	CERAMIC 0.1uF 50V	
C310	1-136-163-00	FILM 0.068uF 5% 50V	
C311	1-136-163-00	FILM 0.068uF 5% 50V	
C312	1-124-910-11	ELECT 47uF 20% 50V	
C331	1-162-306-11	CERAMIC 0.01uF 30% 16V	(AEP, UK, G, IT, EE, CIS)

POWER AMPLIFIER

PRIMARY

Ref. No.	Part No.	Description				Remark
C332	1-162-306-11	CERAMIC	0.01uF	30%	16V	(AEP, UK, G, IT, EE, CIS)
C351	1-126-161-11	ELECT	2.2uF	20%	50V	
C353	1-162-282-31	CERAMIC	100PF	10%	50V	
C354	1-124-910-11	ELECT	47uF	20%	50V	
C355	1-124-910-11	ELECT	47uF	20%	50V	
C356	1-124-122-11	ELECT	100uF	20%	50V	
C357	1-126-233-11	ELECT	22uF	20%	50V	
C360	1-136-163-00	FILM	0.068uF	5%	50V	
C361	1-136-163-00	FILM	0.068uF	5%	50V	
		< DIODE >				
D301	8-719-987-63	DIODE 1N4148M				
D351	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC301	8-749-900-24	IC STK-4162MK2				(E, AUS, EA, HK, JE, MX, MY, SP)
IC301	8-749-920-09	IC STK-4152MK2K				(AEP, UK, G, IT, EE, CIS)
		< COIL >				
L301	1-420-872-00	COIL, AIR-CORE				
L351	1-420-872-00	COIL, AIR-CORE				
		< TRANSISTOR >				
Q301	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
Q302	8-729-900-36	TRANSISTOR DTC124ES				
Q303	8-729-620-05	TRANSISTOR 2SC2603-EF				
Q351	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
		< RESISTOR >				
R301	1-249-417-11	CARBON	1K	5%	1/4W	
R302	1-249-438-11	CARBON	56K	5%	1/4W	
R303	1-249-415-11	CARBON	680	5%	1/4W	
R304	1-249-438-11	CARBON	56K	5%	1/4W	
R305	1-249-425-11	CARBON	4.7K	5%	1/4W	
R306	1-249-425-11	CARBON	4.7K	5%	1/4W	
R307	1-249-425-11	CARBON	4.7K	5%	1/4W	
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	
⚠R309	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R310	1-217-151-00	METAL PLATE	0.22	10%	1/2W	
R311	1-249-417-11	CARBON	1K	5%	1/4W	
R312	1-249-431-11	CARBON	15K	5%	1/4W	
R313	1-249-441-11	CARBON	100K	5%	1/4W	
R314	1-249-421-11	CARBON	2.2K	5%	1/4W	
R315	1-249-421-11	CARBON	2.2K	5%	1/4W	
R316	1-249-421-11	CARBON	2.2K	5%	1/4W	
R317	1-249-421-11	CARBON	2.2K	5%	1/4W	
R318	1-247-791-91	CARBON	22	5%	1/4W	
R319	1-247-791-91	CARBON	22	5%	1/4W	
R320	1-247-791-91	CARBON	22	5%	1/4W	
R321	1-247-791-91	CARBON	22	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	
R323	1-247-881-00	CARBON	120K	5%	1/4W	
R324	1-249-437-11	CARBON	47K	5%	1/4W	
R325	1-249-417-11	CARBON	1K	5%	1/4W	
R326	1-249-439-11	CARBON	68K	5%	1/4W	
R327	1-249-437-11	CARBON	47K	5%	1/4W	
R328	1-249-426-11	CARBON	5.6K	5%	1/4W	
R329	1-247-863-91	CARBON	22K	5%	1/4W	
⚠R330	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R351	1-249-417-11	CARBON	1K	5%	1/4W	
R352	1-249-438-11	CARBON	56K	5%	1/4W	
R353	1-249-415-11	CARBON	680	5%	1/4W	
R354	1-249-438-11	CARBON	56K	5%	1/4W	
R355	1-249-425-11	CARBON	4.7K	5%	1/4W	
R356	1-249-425-11	CARBON	4.7K	5%	1/4W	
R357	1-249-425-11	CARBON	4.7K	5%	1/4W	
R358	1-249-425-11	CARBON	4.7K	5%	1/4W	
⚠R359	1-212-881-11	FUSIBLE	100	5%	1/4W	F
⚠R360	1-217-151-00	METAL PLATE	0.22	10%	1/2W	
R361	1-249-417-11	CARBON	1K	5%	1/4W	
R362	1-249-431-11	CARBON	15K	5%	1/4W	
R363	1-249-441-11	CARBON	100K	5%	1/4W	
R368	1-247-791-91	CARBON	22	5%	1/4W	
R369	1-247-791-91	CARBON	22	5%	1/4W	
R370	1-247-791-91	CARBON	22	5%	1/4W	
R371	1-247-791-91	CARBON	22	5%	1/4W	

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Ref. No.	Part No.	Description	Remark
*	1-654-762-11	PRIMARY BOARD *************	
	1-533-293-11	FUSE HOLDER	
		< CONNECTOR >	
CN900	1-564-321-00	PIN, CONNECTOR 2P	
		< FUSE >	
⚠F901	1-532-285-00	FUSE (1.25A/250V)	
⚠F902	1-532-286-00	FUSE (2.5A/250V)	(E, AUS, EA, HK, JE, MX, MY, SP)
		< SWITCH >	
⚠S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR)	(E, AUS, EA, HK, JE, MX, MY, SP)

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
*	1-654-763-11	SECONDARY BOARD ***************	
	1-533-293-11	FUSE HOLDER	
		< CONNECTOR >	
CN901	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
* CN902	1-564-506-11	PLUG, CONNECTOR 3P	
		< FUSE >	
⚠F903	1-532-203-00	FUSE (2A/250V)	
⚠F904	1-532-203-00	FUSE (2A/250V)	

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Ref. No.	Part No.	Description	Remark
*	1-654-761-11	SPEAKER BOARD *************	
		< CAPACITOR >	
C401	1-136-165-00	FILM 0.1uF 5% 50V	(AEP, UK, G, IT, EE, CIS)
C402	1-136-165-00	FILM 0.1uF 5% 50V	(AEP, UK, G, IT, EE, CIS)
C451	1-136-165-00	FILM 0.1uF 5% 50V	(AEP, UK, G, IT, EE, CIS)
C452	1-136-165-00	FILM 0.1uF 5% 50V	(AEP, UK, G, IT, EE, CIS)
		< CONNECTOR >	
* CN401	1-564-519-11	PLUG, CONNECTOR 4P	
		< RESISTOR >	
R401	1-249-393-11	CARBON 10 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
R402	1-249-393-11	CARBON 10 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
R451	1-249-393-11	CARBON 10 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
R452	1-249-393-11	CARBON 10 5% 1/4W	(AEP, UK, G, IT, EE, CIS)
		< TERMINAL >	
TB401	1-537-822-11	TERMINAL BOARD (SP) (SPEAKER)	

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
* 9	1-769-784-11	WIRE (FLAT TYPE) (23 CORE)	
⚠63	1-574-902-11	CORD, POWER (E, JE, MX)	
⚠63	1-575-651-11	CORD, POWER	(AEP, G, IT, EA, EE, HK, MY, SP, CIS)
⚠63	1-690-608-11	CORD, POWER (AUS)	
⚠63	1-696-570-21	CORD, POWER (UK)	
⚠64	1-569-007-11	ADAPTER, CONVERSION 2P (E, JE)	
⚠64	1-569-008-11	ADAPTER, CONVERSION 2P (EA, HK, MY, SP)	
⚠64	1-770-019-11	ADAPTOR, CONVERSION (HK)	
⚠T901	1-427-700-11	TRANSFORMER, POWER	(E, AUS, EA, HK, JE, MX, MY, SP)
⚠T901	1-427-701-11	TRANSFORMER, POWER	(AEP, UK, G, IT, EE, CIS)

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HARDWARE LIST
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Ref. No.	Part No.	Description
#1	7-685-646-79	SCREW +BVTP 3×8 TYPE2 N-S
#2	7-685-871-01	SCREW +BVTT 3×6 (S)
#3	7-685-650-79	SCREW +BVTP 3×16 TYPE2 IT-3

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.